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NEWSLETTER

Vol. 15 Number 16 September 17, 1951

First look at air transport's war plans was provided last week by D. W. Rentzel, Under Secretary of Commerce for Transportation. He released the official report of the Air Transport Mobilization Survey. **For complete details,** see page 4 of this Newsletter.

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$20.2 billion for military aircraft and related procurement in fiscal 1952 was recommended last week by Senate Appropriations Committee. Here's how it's divided:

Air Force: $11,215,800,000 for planes and related procurement.

Navy: $4,000,000,000 for same purpose.

Extra $5 billion for undisclosed aviation expansion projects.

Total AF appropriation would be $20,029,285,000 (exclusive of the $5 billion special fund); Navy gets $15,573,648,000; Army, $20,056,170,030.

Not all the plane money in the bill would be spent during fiscal 1952, however, because of lead times involved in some of required aircraft, missiles, etc. Committee suggested, for example, that AF's $11.2 billion be spent as follows: $3,215,800 for fiscal 1952 and thereafter, and $8 billion for fiscal 1953 and thereafter. **Navy's** money would be divided $1,050,000,000 for 1952 and thereafter and $2,950,000,000 for 1953 and thereafter.

Congress will soon be asked to provide additional $8 billion in military funds, to meet cost of replacing equipment being expended in Korea and for new military construction.

800 helicopters, to cost $187,673,065, are sought by Army and Navy in the appropriation. Navy wants about 500 at $157,533,065; Army wants 287 costing $30,140,000.

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The U. S. Navy has raised the authorized overhaul period on the Pratt and Whitney J-42 Turbo-Wasp, used in the Grumman F-9F-2 Panther, from 500 hours to 1,000 hours. This is the first turbine engine in regular service to ever reach this high service life, closely comparable with the service life of piston engines in military service. Rated at 5,000 pounds static thrust, the J-42 has logged more than 150,000 hours operation without experiencing a turbine failure.

Nine turbine engines of French design will be introduced into this country by Continental Motors Corp. which purchased exclusive U. S. manufacturing rights to the series from Societe Turbomeca of Bordes, France. The series covers turbines with output from 200 to 1,100 hp.

Initial production of these turbines will be handled by Continental Aviation & Engineering Corp., Detroit, subsidiary of Continental Motors. This will mean expansion of subsidiary organization and facilities as the program gets under way.

Deal is considered the hottest since the Curtiss-Wright Armstrong Siddley agreement which brought the J-65 Sapphire and other promising engines to the U. S. Like the Curtiss-Wright deal, the Continental Motors acquisition brings to the U. S. a series of engines with wide potential applications. Some engines in the series are primarily designed as ground power units, others as turbo-prop type engines with gearing to handle a wide range of mechanical tasks, others for turbojet aircraft, helicopters, target planes and utility aircraft.

Possibility in latter field is stressed by Continental's claim that one ducted fan turbine engine, installed in a present 4-place airplane, would permit an increase in cruising airspeed from 170 miles per hour to 300 miles per hour.

Unusual features of the Turbomeca engines includes high r.p.m. (about 35,000), the absence of columbium, cobalt, tungsten and other critical metals from the design, high compressor ratios permitting high power-weight ratio and small size.

Stratos Division of Fairchild Engine and Airplane Corp. recently obtained U. S. rights to the Turbomeca Oredon, one of the prime engines in the group, but Continental's license spanning nine models should cover all the remaining designs:

Artouste I: Weighing 185 pounds, the Artouste I produces 280 horsepower, is particularly suited to helicopter use.

Pimene: Weighing 118 pounds, the Pimene, first French turbine engine to pass the ICAO 150-hour endurance test, is rated at 220 pounds thrust, is 16 inches in diameter, 32 inches long. Useful in target aircraft and other applications in the 400-500 m.p.h. class.

Palouste: A turbine air compressor producing 1,830 cubic feet of free air per minute at 50 pounds per square inch. Well suited for use in starting large aircraft turbines, as a portable heater, for jet helicopter rotor drives or as a ground air power source.

Palas: Turbojet engine with single stage compressor weighing 132 pounds and rated at 330 pounds thrust for take-off. 16.1 inches in diameter, 41.5 inches in length.

Marbore: Turbojet engine with centrifugal type compressor rated at 880 pounds thrust. Weight 265 pounds, diameter 22.3 inches, length 54.4 inches.

Aspin: Turbojet engine with stage axial compressor rated at 485 pounds thrust for take-off. Weight 280 pounds, diameter 22.8 inches, length 47.6 inches.

Big bottleneck in defense production program is still machine tool industry. Defense mobilizer Charles Wilson says the industry will have to produce $3 billion worth of equipment between now and end of 1953. He hopes it can turn out $800 million worth of tools this year, double that amount next year.

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Navy has taken initiative in starting turbo-prop transport development with an order for one turbo-prop-powered Douglas DC-6A Liftmaster and one Lockheed Super Constellation.

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MANUFACTURING

Manufacturers denied charges by Jerome Lederer, director of Guggenheim Aviation Safety Center, that they subordinate safety in plane design. Lederer told the Anglo-American Aeronautical Conference in England that plane builders take a "callous attitude" toward safety and concentrate on profits in designing aircraft. Adm. DeWitt C. Ramsey, president of Aircraft Industries Association, called Lederer's statements "patently untrue" and "completely unsupportable by facts," and added that no manufacturer has ever knowingly sacrificed safety in transport planes to any consideration whatever. Situation might be different in military planes, since there are times when the element of risk must be commensurate with high performance, he said.

Small businesses are now able to participate in negotiated as well as advertised Air Force procurements. Until now, advance information on proposed negotiated contracts was not available, but under new plan data on all proposed unclassified procurements in excess of $10,000 will be made available to small businesses through regional and district procurement offices.

Production of jet engines is six months behind schedule, with machine tool production the principal bottleneck. Adm. DeWitt C. Ramsey, president of Aircraft Industries Association, reported. He also said shortages of steel, copper and aluminum are being severely felt by industry in some places.

Lockheed Aircraft Corp. has joined the list of aviation firms officially reporting a backlog of over $1 billion. Companys' unfilled orders total $895,438,000 and letters of intent currently bring total backlog to $1,245,600,000.

Navy will help any defense manufacturers by making available its facilities to produce machine tools, forgings and castings. Firms needing these products to finish their defense contracts on schedule may have work done at Navy facilities if equipment is available and job can be handled. Navy will charge for the work. Vice Adm. A. G. Noble, chief of Office of Naval Materiel, emphasized that program is open only to firms which can't get early delivery from private sources and is temporary until machine tool industry can meet equipment needs.

Walkout of United Auto Workers-CIO continued at Douglas Aircraft's Long Beach plant last week. After strike started Sept. 5, supervisory personnel finished a C-124 on the flight line and flew it to Santa Monica plant for final inspection. Douglas had about 700 supervisory personnel remaining on the job in production department, and same process is scheduled for second C-124.

Lockheed Aircraft Corp. received Air Force facilities contract to construct a new $12,650,000 plant at Palmdale, Calif., for final assembly of jet aircraft. Final assembly and production testing is now being handled at San Fernando Valley Airport, Van Nuys.

Gyrodyne Co. of America is consolidating all its activities at recently-acquired 362-acre tract at Flowerfield, L. I. Tract now has 30,000 sq. ft. of manufacturing space. Gyrodyne's GCA Coaxial Model 2 is undergoing further flight tests at new site.

Chicago Metal Hose Corp., Maywood, Ill., will build 120,000 sq. ft. plant at Memphis, Tenn., for fabrication of aircraft assemblies and components. It will be in operation by next March.

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PLANES AND EQUIPMENT

Special Civil Air Regulation (Amendment 4b-2) on cockpit standardization has been suspended by CAB until Apr. 1, 1952, to permit the Board to study conclusions reached by a Society of Automotive Engineers committee now working on the same subject. SAE studies, which may be completed before year-end, "may reveal a need for certain changes to the standardization provisions adopted by the Board," CAB said.

Power plant installation tests on L-1049 Super Constellation prototype are now being run by Lockheed Aircraft Corp. Plane is being flown with three P&W R-2800's and one Wright R-3350. The prototype, first C-69 Constellation ever built and which first flew in 1943, was cut fore and aft of the wing and stretched 18.4 ft.

New lightweight engine suspension has been developed by Lord Manufacturing Co. and has been adopted as standard equipment on Lockheed L-1049 Constellations. Mounting, designated MR-41, permits weight saving of about four pounds per engine assembly.

New rocket engine for auxiliary power for jet aircraft has been developed by British Armstrong-Siddeley Motors Ltd. Named the "Snarler," engine develops 2,000 pounds thrust at sea level, weighs 215 lbs. and fits into six by three ft. space.

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MILITARY

Two new contracts for civil-operated basic pilot training schools and one for training airplane and engine mechanics have been awarded by Air Force. Pilot contracts went to Southern Airways School, Bainbridge, to operate Bainbridge Air Base, and Anderson Air Activities, Milwaukee, to operate Malden Field, Mo. Dallas Aviation School, Tex., will train 300 AF military personnel as mechanics.

Contracts awarded by Air Force include: Pan American World Airways, Brownsville, Tex., to overhaul 1,200 P&W R-1830 engines; Texas Engineering and Manufacturing Co., Greenville, Tex., cycle reconditioning of C-54's; Aircraft

(*Continued opposite page* 70)

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NEWEST plane testing the Goodyear Cross-Wind Landing Wheels is the C-54 shown here—biggest airplane to operate with the revolutionary new gear that lets a plane land without reference to wind heading.

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other publications

American Aviation Daily (including International Aviation): Published daily except Saturdays, Sundays and holidays. Subscriptions: $16 one month; $180 one year Daniel S. Wentz II, managing editor.

American Aviation Directory: Published twice a year, spring and fall. Single copy, $5.00. Marion E. Grambow, managing editor.

Official Airline Guide: Monthly publication of airline schedules and fares. Subscriptions: U. S. A. and countries belonging to the Pan American Postal Union, including Spain and the Philippines, $9.00 one year, Canada, $9.50. All other countries, $11.00. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. State 2-2154. C. N. Johnson, managing editor.

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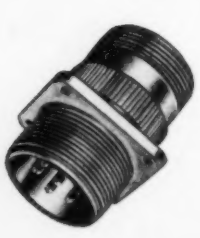

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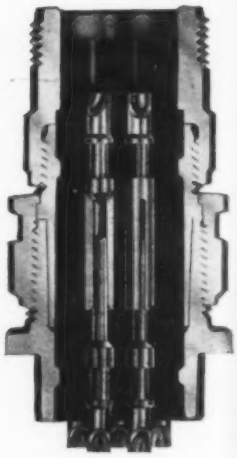

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Editorial

Swapping with Europe

WHILE ECA is sending millions of dollars worth of machine tools to Europe, Europe is offering machine tools to this country for immediate delivery. We load our tools at one dock in New York and unload European tools at another dock a short distance away.

This doesn't make sense and practical industrial men such as Harold R. Boyer, Deputy Defense Production Administrator for Aircraft Production, are trying to work out a more sensible solution to the machine tool production.

by W. W. P.

Meantime the Pentagon is trying to get American aircraft manufacturers to sponsor production of parts in Europe, while here at home we're desperately short of machine tools.

The sensible solution, of course, is to utilize whatever facilities are available in Europe for production of spare parts and to keep European machine tools in Europe. By the same token we should stop ECA from exporting machine tools which we need at home until our own needs are filled.

To purchase machine tools from Europe makes sense only when we aren't shipping machine tools over there via ECA.

If the Pentagon has its way in fostering parts production in Europe for U. S. aircraft, the western world will be on the way to unifying production capacity in a way never dreamed of before. It is a move of vast significance.

An example of this welding together of free-world capacity is the recent move by Lt. Gen. K. B. Wolfe, recently retired as deputy chief of staff, materiel, of the Air Force, to establish an American branch of a Swiss tool works. Few in this country are more familiar with military procurement than Gen. Wolfe, and his link with a large Swiss firm may be the beginning of new industrial relationships throughout the western world.

Whether we like it or not, the western world must work more closely together if it is to survive, To work together means give and take. Thus the greater use by us of production facilities in Europe, and also providing greater outlets here for European products, offers an important economic means for survival.

The day is gone when there can be separate air forces. In World War II there were four such Air Forces in the world—Britain, U. S., Germany and Russia. Today there are but two major air powers—the U. S. and Russia. And in our camp must be the valuable facilities of the British, and the small but valuable facilities of the French and Italians. The Germans, as everyone knows, have a great potential if given the chance to rebuild and it seems in the cards that they will be brought closer into the overall production picture as time goes on.

The secret for the future is standardization and dispersed, widespread production facilities, all working toward one air power for the western world. The signs would indicate we are moving in this direction.

Gerry

Gerard B. Dobben was more than a colleague to us at AMERICAN AVIATION. He was a valued friend. For eight years he enriched our lives with his congeniality, his friendly humor, his utter unselfishness and consideration of others, and his willingness at all times to give a lift to any problem or task.

Gerry Dobben was in the prime of life. He had not a single enemy in the world. He was a humble toiler who brought up a fine family and gave his unstinting best to his employer. He was made of good, sound stuff. He was an honorable man leading an honorable life. Then inexplicably he was suddenly called.

Gerry Dobben was a reporter of the old school, which meant that he dug for facts, followed through on his stories and stayed with the job until it was done. He was honest and fair. All of those in aviation with whom he came in contact liked and respected him. His last big assignment, which he carried through with genuine competence, was the Air Line Pilots Association reorganization in Chicago recently.

A talented colleague has been lost, but much more than that we've lost one of the grandest and most selfless guys who ever trod this earth.

WAYNE W. PARRISH

Gerard B. Dobben, 49, a member of the editorial staff of AMERICAN AVIATION PUBLICATIONS since 1943, died of cancer at Georgetown Hospital, Washington, D. C., on Sept. 6.

Before joining AAP on Aug. 17, 1943, Dobben had served for eight and one-half years as Congressional secretary to Rep. Albert J. Engel (R., Mich.).

He was a former president of the Congressional Secretaries Club, a member of the National Press Club and White House Correspondents Association and treasurer of the Aero Club of Washington. He also had served two terms as executive secretary of the Aviation Writers Association.

Born June 18, 1902 at Fremont, Mich., he worked 11 years for the Muskegon *Chronicle* as court reporter and political writer, also serving as correspondent for the Detroit *News*.

He is survived by his wife, a son, Jerry, and a daughter, Mrs. Larry Siggers. Burial was at Muskegon, Mich.

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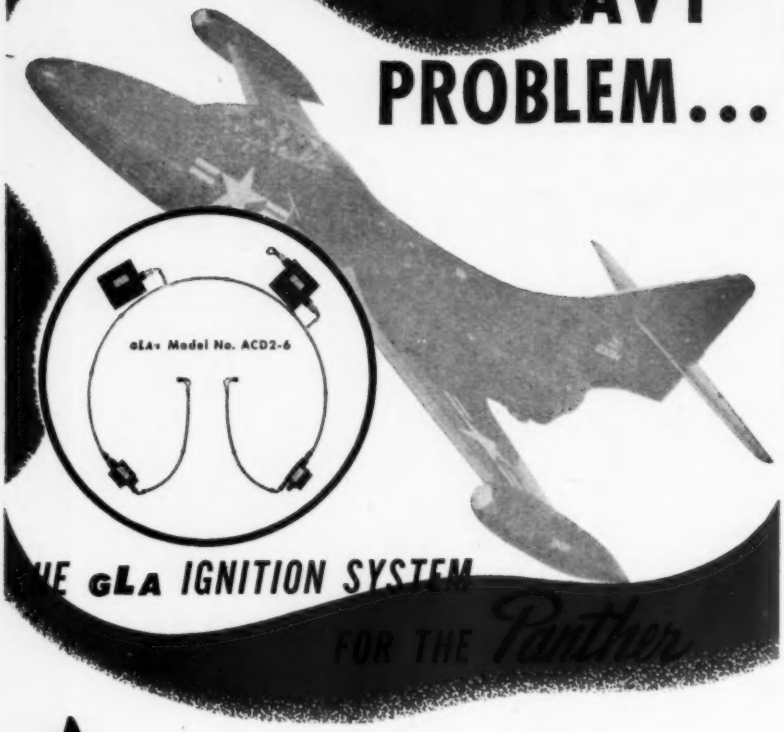

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When & Where

Sept. 25-28—CAA Airport Advisory Committee, Special Airport Design Meeting, Washington, D. C.

Sept. 26-28—American Society of Mechanical Engineers, Fall Meeting, Radisson Hotel, Minneapolis, Minn.

Sept. 26-28—Radio Technical Commission for Aeronautics, Fall Assembly Meeting, Cavalier Hotel, Virginia Beach, Va.

Oct. 2-4—Aircraft Spark Plug and Ignition Conference, Hotel Secor, Toledo, Ohio.

Oct. 3-6—Society of Automotive Engineers, Aeronautic, Aircraft Production Forum, and Aircraft Engineering Display, Biltmore Hotel, Los Angeles.

Oct. 4-6—Southeastern States Airport Operators Council, Manteo, N. C.

Oct. 8-10—National Defense Transportation Assn., 6th Ann. Conv., San Antonio, Texas.

Oct. 8-10—Air Transportation Committee, American Inst. Electrical Engineers, Los Angeles.

Oct. 11-12—Airport Management and Opns., 1951 Conf., U. of Okla., Norman, Okla.

Oct. 13—Los Angeles Air Fair, Los Angeles Intl. Airport, Calif.

Oct. 16-17—Fourth Annual New York State Conf. on Airport Development and Operation, Onondaga Hotel, Syracuse, N. Y.

Oct. 18-20—Fifth Annual Arizona Aviation Conference, Phoenix.

Oct. 24-27—NASAO Annual Meeting Arizona Inn, Tucson.

Oct. 29-31—Society of Automotive Engineers, Transportation Meeting, Knickerbocker Hotel, Chicago.

Oct. 31-Nov. 1—Society of Automotive Engineers, Fuels and Lubricants Meeting, Drake Hotel, Chicago.

Nov. 7—Wings Club annual dinner, Waldorf Astoria Hotel, New York.

Nov. 13-16—National Aviation Trades Assn., 12th Ann. Conv., Hotel Texas, Fort Worth, Texas.

Nov. 28-30—Aviation Distributors and Manufacturers Assn., Annual Winter Mtg., Waldorf-Astoria Hotel, New York.

Dec. 17—Wright Brothers Memorial Dinner, Statler Hotel, Washington, D. C.

International

Oct. 4—Royal Aero. Society, 7th British Commonwealth & Empire Lecture, London.

Oct. 29-30—Air Industries and Transport Assn. of Canada, Annual General Mtg., Seigniory Club, Montebello, Quebec.

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Letters

Letters should be addressed to The Editor, American Aviation Magazine, 1025 Vermont Ave., N.W., Washington 5, D. C. Anonymous letters will not be printed, but names will be withheld upon request.

Accurate Article

To The Editor:

I have just finished reading your article on "Western Begins Convair Modification" in the August 20th issue and am amazed to find the accuracy of the facts and figures brought out in the article. It is surprising how much information you fellows can pick up with a few scribbled notes.

STANLEY R. SHATTO
Western Air Lines, Inc.
Los Angeles 45, Calif.

Rebuttal

To The Editor:

I cannot help but note that Reader Andrews (letter to the Editor in the Aug. 20 issue) takes issue with my merger proposals on grounds of (1) monopoly; and (2) splitting Capital "in order to achieve a fifth or sixth transcontinental air carrier which we need like we need another hole in our heads."

Even a "Professor Dim-Wit" can see that Reader Andrews does not need *another* hole in his head for, had he read the proposal, he would have noted that it provides (1) for increased competition at least between the 100 most important pairs of cities; and (2) for only four transcontinentals as at present, not five or six.

As for Capital's contributions to an alert industry, everyone will agree. But even Capital's top-notch management cannot cope, without mail subsidies in normal times, with the tough shortcomings of its route structure.

HAROLD D. KOONTZ
University of California

Impact

To The Editor:

I am sending you the Air Industries & Transport Association's release based on your "One-Way Street" editorial.

This will be of interest to you I know, as it was sent out to about eighty of the principal newspapers of Canada and to individual aviation writers and members of the Association. Its total distribution in all was about three hundred.

You know also that the editorial was picked up and used practically verbatim by both Canadian Aviation and Aircraft & Airport.

We cannot help but think that General Marshall was feeling the force of its impact when he announced shortly after your editorial appeared that $300,000,000 would be spent in Canada annually by the United States in the purchase of military equipment.

GORDON J. STRINGER
Canadair Limited
Montreal

Learmatic

To The Editor:

Permit me to congratulate you on the very intelligent comprehension and presentation of the principles on which our Learmatic Navigator is based. Bill Lear has asked me to add his appreciation to mine for your excellent article.

NORMAN WARREN
Lear, Inc., Learcal Division
Los Angeles

At the time Lear story appeared no details on cost, weight or power requirements of the Learmatic Navigator were available. Weight of Learmatic is 1 pound 4 ounces, cost $675. Power supply is 26 volts, single-phase alternating current. Unit is going into immediate production and will be available for sale within a few weeks.—Ed.

Train-Hurdling Lodestar

To The Editor:

In the Aug. 6, 1951 issue on Page 48 you carried a picture which showed an airport traffic controller controlling a Frisco railroad train by use of a light signal gun. The caption accompanying the picture begins: "The world's first airport tower-controlled railroad went into operation recently . . .".

This statement was of considerable interest to me since as Chief Controller of the airport traffic control tower at the International Airport, Miami, Florida, from 1943 through 1948, one of my continuing problems was the controlling of Seaboard Railroad trains which crossed the north-south runway and taxi-way. This problem reached a climax when an engineer inadvertently entered the runway without proper clearance in front of a landing Lockheed Lodestar. The circumstances were such that the pilot's only recourse was to bounce the aircraft completely over the engine which was across the runway. This difficult feat he successfully accomplished, with the incident being noted by the local press and news wire services.

As a step in the improvement of the Miami International Airport, they have just completed the removal of the Seaboard Railroad shops and tracks from the center of the airport during the past few months. Therefore, it appears that Wichita's Beech Field is far from the first to encounter this particular problem.

JAMES F. ARTHUR
Hapeville, Georgia

Correction

To The Editor:

In the issue of American Aviation of Aug. 20, 1951, you printed an interesting though very superficial, survey entitled "Will French Aircraft Cut into U.S. Market?"

Giving the specifications of the Breguet 76-3, you quoted a gross weight of 52,536-lbs. This figure represents the empty weight—gross weight is 105,900 lbs. We would appreciate your correcting this error.

JACQUES M. BELLE
Breguet Aircraft Co.
New York

Transit Van

Just a note to let you know that I thought Bill Perreault's article on the Transit Van was an excellent report on the status of the project to date. The manner in which you treated the subject was very gratifying to me.

We continue to make slow progress with the development and have hopes that we can work it into something practical and useful.

JOHN R. ALISON, President
Transit Van Corporation
Redwood City, California

MRA

To the Editor:

Just a word of appreciation for the excellent article, "MRA: Can it Solve Airline-Labor Problems?" in your August 6 issue. We appreciate very much the fair, accurate and objective presentation you have made.

CHARLES H. HAINES
Director, Moral Re-Armament
Los Angeles, Calif.

More Bouquets

To the Editor:

I have purposely held up commenting on your new format until the second issue, which convinces me more than the first that you have improved the overall appearance.

Magazines, like airplanes, need to be redesigned to keep up with changing trends, and the new look is as modern as the industry in which you operate.

Your editorial will be as well read inside as it was on the cover, as your followers would hold it up to a mirror if you printed it in reverse type.

J. H. COBB
Director of Public Relations
& Advertising
Delta Air Lines, Inc.

To the Editor:

As might be expected, I notice you are having a few pro's and con's of opinion on the new format of AMERICAN AVIATION. I am a lusty pro in support of the change and feel it adds substantially to your already excellent magazine.

D. V. RICHARDSON
District Traffic & Sales Manager
Trans-Canada Air Lines
Chicago

To The Editor:

May I extend congratulations on the new make-up, which is "gilding the lily" in my opinion. Best wishes for continued success.

LT. LEONARD A. MAYER, USAF
(ex-TWA)

REPUBLIC F-84 THUNDERJET POWERED BY ALLISON J35 TURBO-JET

CONVAIR TURBO-LINER POWERED BY TWO ALLISON T38 TURBO-PROPS

Experience where it counts most—in the air

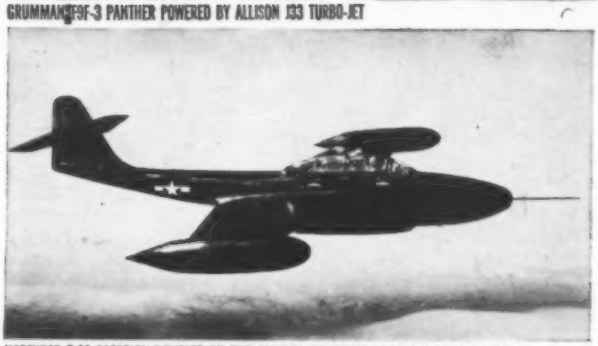
The U. S. Air Force and U. S. Navy have accumulated more than 1,000,000 hours of actual flight operation with Allison Turbo-Jet engines in the airplanes shown on this page. This is more time in the air than the jet engines of any other manufacturer in the world.

Represented in this broad background of experience are thousands of hours of flight time on both J35 axial and J33 centrifugal flow engines—with and without afterburners—on the two models.

Navy sponsored Allison T40 twin Turbo-Prop engines are adding to Allison experience in two Navy planes. The T38 single engine Turbo-Prop in the Turbo-Liner, America's first turbine transport, is now undergoing tests at Edwards Air Force Base.

It's experience that counts—and these turbine engines have it where it counts most—in the air—in these airplanes.

GRUMMAN F9F-3 PANTHER POWERED BY ALLISON J33 TURBO-JET



NORTHROP F-89 SCORPION POWERED BY TWO ALLISON J35 TURBO-JETS WITH AFTERBURNERS

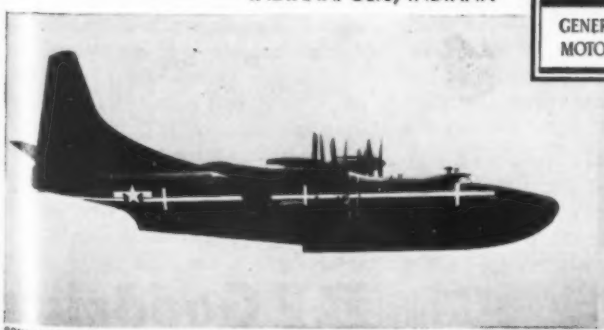
Allison J33 engines also lend assistance to reciprocating engines in the Martin P4M and North American AJ-1.

Allison

DIVISION OF GENERAL MOTORS
INDIANAPOLIS, INDIANA

GM
GENERAL MOTORS

DOUGLAS A2D SKYSHARK POWERED BY ALLISON T40 TURBO-PROP



CONSOLIDATED P5Y FLYING BOAT POWERED BY FOUR ALLISON T40 TWIN TURBO-PROPS

LOCKHEED F-94 ALL-WEATHER FIGHTER POWERED BY ALLISON J33 TURBO-JET WITH AFTERBURNER

B.F.Goodrich

Overhead and underfoot, Avtrim cuts costs

KEEPING UP the good looks of an airliner's head lining and floor can be expensive. Head linings get scuffed and smudged. And rugs take a beating from muddy shoes, spilled foods, scraping feet, the pounding of high heels.

Like many other airlines, Pioneer solved the problem with Avtrim, the B. F. Goodrich flexible material. (See photos above.) Used for head lining, it resists scuffs. Dirt can be swished off with a damp cloth. And an occasional once-over with soap and water makes the Avtrim sparkle like new.

The Avtrim flight rug above was installed in August, 1947. Since then, the plane has hauled 388,836 passengers, flown 10,000 hours. The Avtrim rug has never been removed, for cleaning or any other reason.

Avtrim is an ideal material for almost every interior trim job. It's so tough that it far outlasts other materials. It fits snugly around complex contours. It's rich looking and colorful. Many airlines use Avtrim for wall paneling, arm rests, baggage racks and bulkheads, as well as head linings and floors.

Newest development is patterned, colored fabric covered with transparent Avtrim. You can have any pattern, any color, any finish that suits your decorative scheme. B. F. Goodrich is prepared to supply any of 28,000 different combinations. For information on Avtrim styles and prices, write today to *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F.Goodrich
FIRST IN RUBBER

ESTABLISHED JUNE 1, 1937

American Aviation

VOLUME 15 NUMBER 16

A RADIO-CONTROLLED free-flight transonic flying boat model tries a high-speed test run. Note the spray dam along the hull.

Will Navy Order Transonic Flying Boats?

High-speed boats prove practical in Convair research with models; supersonic jets also tested.

TRANSONIC flying boats capable of flying at speeds up to Mach .95 and supersonic boats for operation at up to twice the speed of sound have been proved practical in Navy-sponsored tests carried on by Consolidated Vultee Aircraft Corp.

In hundreds of flight tests of seven "Skates" scaled-down, self-powered, radio-controlled models, Convair has established the base on which transonic flying boats could be built today and supersonic models in the foreseeable future.

No Comment

In all probability the U. S. Navy, which sponsored the tests conducted to date, has already given Convair the go-ahead on a prototype of one of the proven transonic configurations, although Navy officials would neither confirm nor deny this report.

First comprehensive look at Convair's work in this field was released earlier this month in England, where Ernest G. Stout, assistant to the chief engineer at Convair and a leading proponent of the high-speed boat, presented a detailed "Review of High-Speed Hydrodynamics Development" to a joint meeting of the Royal Aeronautical Society and The Institute of the Aeronautical Sciences.

40,000-lb. Gross

Stout presented this picture of the transonic flying boat: A twin-engined fighter bomber (see photo) grossing about 40,000 pounds, this boat would have a thin wing of moderately high sweep, a wing loading of 45 pounds per square foot, taper ratio of 2.5:1, and aspect ratio of 4.

The wing would feature leading edge slats and short-span conventional flaps. To minimize trim changes when flying through the transonic range, an all-movable horizontal tail surface would be used. This surface would have 41 degrees sweep. Conventional ailerons and rudder would be power-operated. Dive brakes would combine the function of water rudder. Speed would be up to mach .95.

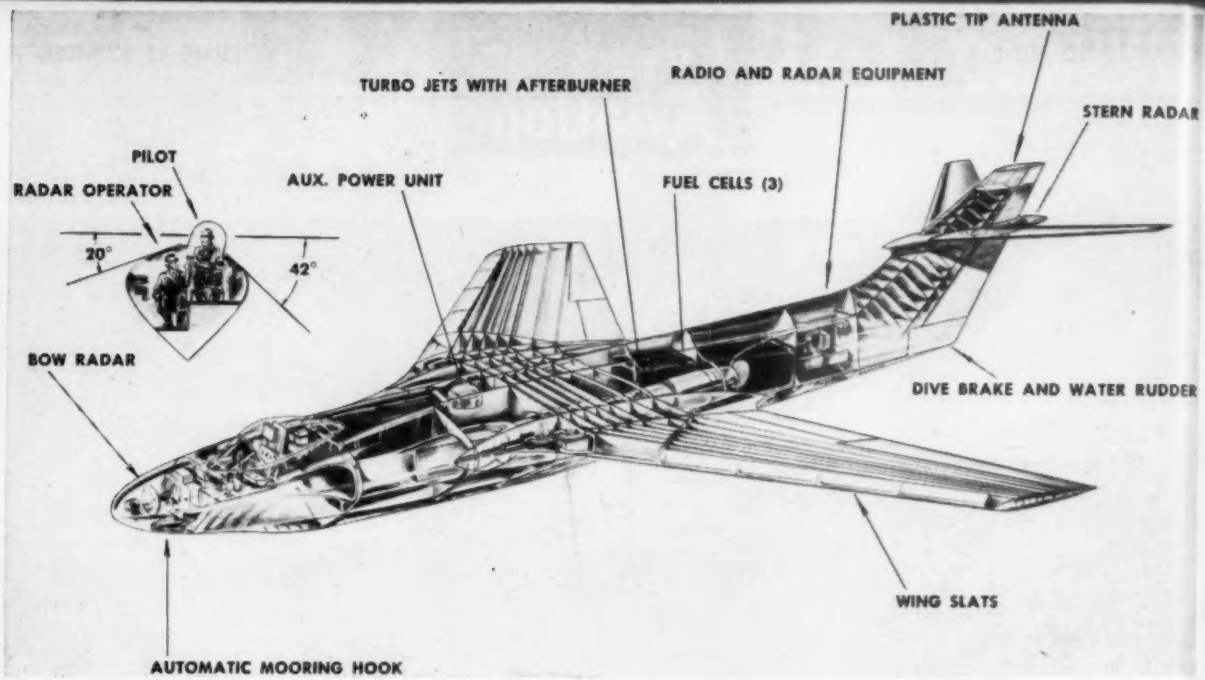
Stout did not treat the supersonic flying boat in such great detail. Principal revelation was that the delta wing, similar to that used in the Convair XF-92A, is particularly well suited to a water-based design. Convair has built and tested such a delta-wing boat model, using 60 degrees wing sweep-back, and is continuing studies on its aerodynamic and hydrodynamic characteristics.

Principal line of research required for the supersonic boat will be in basic planing theory and in impact alleviation at high water speeds.

New Technique

Development of the slow and cumbersome flying boat of World War II into an aircraft which will match the performance of land-based fighters, while revolutionary, has not been an over-night development. Greatest single factor in the process was the development of the dynamically similar model technique of testing.

Introduced into the U. S. by Stout in 1938, the scaled-down models were initially used only in tow tanks for hydrodynamic study. Even in this early stage, Convair found it possible to increase the operating gross weight of the Coronado



A TYPICAL TRANSONIC FLYING BOAT DESIGN, showing off-cen.er pilot canopy and dual-purpose dive brake and water rudder.

flying boat by 60%, applying the lessons learned with models.

In 1943 Convair developed self-propelled, remotely controlled models which, with each integrated model program, can duplicate three to six years of full-scale prototype testing, using earlier methods. From this point, developments were fast, and no better example of this exists than the prototype Convair XP5Y-1 turboprop-powered flying boat now flying.

Some of the major allied developments which have made obsolete the popular conception of the flying boat as an efficient but low-speed load carrier were:

Load Increased

• **Development of new data** on the relationship of the length/beam ratio (ratio of the hull length to its width) which permitted upping load by 200 to 300% while reducing drag, improving resistance to spray, etc.

• **A complete new concept** of spray control in which the conventional hull shape, featuring special curved surfaces (chines) to deflect spray, were abandoned in favor of a new device known as the spray dam. For all practical purposes, the spray dam eliminates spray which would normally make a low-setting high-speed boat impossible.

• **A new concept** of providing watertight integrity which features a dozen or more cellular compartments below the main compartment floor level. This eliminates the full-depth bulkheads used on conventional design and provides maximum freedom of load distribution. It also permits the plane to take off with one compartment flooded and confines flooding to the bilge.

Used XB-46 Model

With these working tools Convair used the first U. S.-built jet bomber, the XB-46, as a model, redesigned it to provide a suitable hydrodynamic hull with a minimum of disturbance of general aerodynamic characteristics. This was accomplished with startling success and formed the first "Skate." "Skate One" was followed by six other models, each incorporating additional features bringing the transonic flying boat closer.

Briefly, this was the process: A transonic swept-wing planform was selected, the center portion thickened to a maximum at the center line and the chord (width of the wing) increased proportionately to maintain the proper thickness ratio. This provided an aerodynamically clean hull in which the engines were housed in the wing fillets.

Result was that the hull, including the lower portion of the load-carrying section, rested well below the water while the plane was at rest.

This inherently low center of gravity and highwater plane inertia made it possible to eliminate wing tip floats. Although the wings of the transonic boats are much closer to the water than those conventional boats, their tendency to roll is greatly reduced. Further, by comparison with the XP5Y-1, the Skate has a tip clearance of five feet instead of three. Thus the transonic boat can roll twice as far laterally and still not submerge a wing tip.

Other features of the transonic and supersonic flying boats:

• **An alternate engine air intake** to prevent flooding the engine during operations in rough seas.

• **A means of closing off** the engine tail pipe to prevent flooding the engine when the airplane is in rough seas with an engine closed down.

Spray Dams

• **Retractable spray dams** with a special air scoop used to bleed air into the deflected water.

• **A chordwise fence** at the inboard end of the aileron to prevent chordwise spread of any spray which may occur.

Stout, who revealed details of the tests, is responsible for all of Convair's Naval development and research. After serving as an aerodynamic engineer with The Glenn L. Martin Co. in 1935-36, he joined Convair to work on aerodynamic and hydrodynamic problems.

In 1941 he won the Lawrence Sperry Award, presented by the Institute of the Aeronautical Sciences, for a "notable contribution made by a young man to the aeronautical sciences." The award carried the citation: "For his contribution to the experimental determination of the hydrodynamic stability of flight boats and seaplanes."

Army 'Cooperates' with AF Tactical Policy

Exercise Southern Pine, marred by Navy's withdrawal, demonstrates air defense—Air Force style.

By Richard Fuller

CONDUCT of Exercise Southern Pine, the joint Army-Air Force maneuvers just completed in the Fort Bragg area of North Carolina, indicates that the feud between the Air Force and the Army over the proper use and control of tactical aviation—a controversy which has crackled with acrimony during the past few months—has not inhibited the two services on an operational level. Coordination between air and ground was generally frictionless.

As originally planned, both Marine Corps and Navy air units were to participate in the air-ground exercises, presumably with the Navy putting ashore the "Aggressor" forces and providing air cover and close support for them.

Although General Hoyt S. Vandenburg, Air Force Chief of Staff, has denied any controversy between the Air Force and the Navy over the Southern Pine exercises, rumors have persisted that Navy-Marine Corps participation in the maneuvers was cancelled because the Air Force requested command of the Navy and Marine squadrons assigned to the maneuvers.

Perennial Wrangle

Perennial source of wrangling between Air Force and Navy has been the question of command of close-support air elements—with the Air Force maintaining that air control should be in the hands of air officers, and the Navy-Marine doctrine holding that the ground leader in the field should have operational control.

Removal of the Navy and Marines from the war games left the Air Force and the Army in their accustomed position as rather uneasy bedfellows. At the termination of the maneuvers, **General Mark Clark,** commander of U. S. ground forces, turned up at Fort Bragg and further ruffled the unquiet waters by proclaiming to the newspapers that he thought control of close-support aircraft should be handled unequivocally to the ground commander.

Such experienced commanders as **General Dwight D. Eisenhower** and Britain's **Field Marshal Sir Bernard Law Montgomery** have in the past voiced opinions contrary to General Clark's. In the amicable days just after the war, both came out on what is now the Air Force side, stating categorically that the airman should command the air and the soldier the ground. Since then, the Air Force has been fighting stubbornly if not brilliantly for this view.

In spite of the sniping at Air Force policy from dissidents in all the other services, the operational policy guiding the military situations created in the Southern Pine exercise was based upon the Air Force's doctrine of tactical aviation, which came into being in 1941.

The Air Force maintains that close support for ground troops is frequently a luxury a theater commander can ill afford. More economical use of air power, i.e. more effective use, is the bombing of enemy supply lines, airfields and other concentrated targets to the rear of the front lines, the Air Force doctrine holds. But first, AF maintains, superiority over the enemy air force must be won.

Major General W. R. Wolfinbarger, USAF Deputy Commander of the war games, discussing the situation at a press conference in Southern Pines, N. C., said:

"Air superiority is the indispensable factor in any campaign. We think it's our job, first of all, to get the enemy air off the backs of our troops.

"There are many conflicting opinions on the subject of tactical air," he went on. "It's natural for a ground commander to want close support for his troops and it's hard for him to understand that the Air Force has other jobs to do *before* it can help him. We believe our concept of tactical air is best because it's flexible enough to cope with almost any military situation. It puts first things first."

Thus, with the tacit concurrence, though presumably not the passionate agreement, of the Army's **Lt. General John R. Hodge,** Southern Pine Maneuver Director, the first task on the Air Force priority list in these war games was the winning of air superiority from the Aggressor air force.

Training Exercise

Exercise Southern Pine, unlike some maneuvers in the past, was not designed to test the tactical skill of ground commanders maneuvering their troops and aircraft in such a way as to defeat a mock enemy. This exercise was planned step by step to provide training for pilots, airmen, and soldiers "fighting" in situations artificially created by Maneuver Director General Hodge, who controlled the movements of both the Aggressor and the "U. S." forces.

At the outset of the maneuvers, the Aggressor army was assigned numerical superiority in aircraft of almost three to one, including a squadron of Republic F-84 jets.

First air plan of the defending U. S. forces called for a program of intensive attack against the Aggressor's sources of air strength, in an attempt to wrest control of the air from the numerically stronger enemy.

This counter-air action obviously reduced the number of planes which could be used in close-support opera-

Battle of the Budget Coming Up

The now-acute fight over which armed service should boss the air over the front lines will reach a climax in the months ahead as military leaders get down to planning budgets for fiscal 1953.

If past patterns are followed, the battle for tactical aviation funds will be fought in the press and on Capitol Hill with much sound and fury before anything resembling unity is reached by Army-Air Force-Navy leaders.

With a growing demand in Congress for a test of the merits of the Air Force theory of tactical air power, the AF has quietly taken steps to make sure that all interested parties are well informed on approved AF policy.

The AF's concept of the proper function of tactical aviation will be outlined in detail in a forthcoming booklet, "Tactical Air Power," now in process of publication under AF supervision. This booklet will explain in detail the theory and historical precedent supporting the doctrine that operational control of tactical air units should be exercised jointly by AF and Army officers, with final command decision resting in the hands of the air officers.

Publication date has not yet been set, but distribution is expected to be widespread among military personnel and members of Congress.

tions, but the Air Force holds that the counter-air program would, in the long run, be more effective. The North American B-45 airplanes used to initiate this action struck chiefly at Aggressor airfields and air facilities.

Two squadrons of the 137th Fighter Bomber wing of Alexandria Air Force Base, La., played a dual role in the exercise, fighting first on the Aggressor side and later switching to the defending U. S. Ninth Air Force when it was assumed by the high command that air superiority had been won. Since the Aggressors were theoretically invading a foreign shore, it was apparent that its rate of aircraft replacement would be zero and that the U. S. program of counter air would further reduce the enemy air power.

Tactical aircraft employed by both U. S. and Aggressor air forces included Republic F-84 Thunderjets, Lockheed RF-80 Shooting Stars, North American B-45 Tornadoes and F-51 Mustangs and Douglas RB-26 Invaders.

In addition to the vigorous counter-air offensive on the part of the U. S. forces, close-support strikes were sandwiched in, during the early period of the maneuvers, for training purposes. After the transfer of the two squadrons of the 137th, when it was assumed that air superiority had passed from the Aggressors to the U. S., an intensive program of close support was begun.

Joint Planning

Central nervous system of these missions is the **Joint Operations Center,** where plans for the next day's air program are laid the night before in conferences between top air and ground officers.

Adjacent to the JOC, which was located in a dusty pine forest, was the **Tactical Air Control Center,** manned by officers and men of both the Air Force and the Army. Here the position of every airplane in the battle area was plotted on a huge table map. At this communications center, where personnel of the two services appeared to be working in total harmony, there was received constant information from radar stations scanning the skies. From the TACC, instructions were given to fighters and to Tactical Air Control Parties, manned by Air Force pilots.

Obvious to observers of the war games was an almost frantic eagerness on the part of Air Force officers to give the Army the kind of support it requested. Stung by such anti-air Force comments as those General Clark made at the termination of the maneuvers, the Air Force sometimes flew close-support missions against targets which it was believed could more easily have been taken under fire by artillery.

Exercise Southern Pine—From 500 Feet

STANDING beside a North American T-6 Mosquito plane used to guide fighters to their targets in the joint Army-Air Force maneuvers, Exercise Southern Pine, 1st Lt. Raymond J. Buseman was briefing this AMERICAN AVIATION reporter on a flight we were preparing to make.

"We'll fly this mission exactly as they are flown in Korea," he said. "If you have a queasy stomach, I'd advise you not to go with me because you'll just get sick. We're going to be gone for three hours and only about 15 minutes of that time will be spent in straight and level flying. In order for me to see the ground, I have to stand the airplane on its wing and then, of course, there's lots of diving and so forth. I've flown these missions in Korea, and the only difference is that there we stayed up for five hours. It's no fun, but you'll see how we get fighters onto good ground targets."

Once airborne, we immediately communicated with the Tactical Air Control Center, our headquarters. We were directed to an area to look for targets where large "Aggressor" forces were believed to be deployed. The air was alive with aircraft. Below us two helicopters snooped along at tree-top level. Overhead four North American F-51's circled, as we searched for targets for them.

Buseman began a series of violent, steep S-turns over a road which wound through the pine forest below us. On the ground amidst the trees I saw four six-by-six trucks, several clusters of other vehicles, all rather inexpertly camouflaged, and a winding chow-line of Aggressor soldiers.

"Discover. This is Tomohawk," Buseman said into his mike as he called "our" fighters. "I have numerous enemy vehicles right under me and maybe a couple hundred soldiers. It's right here at the cross-roads. Make your run east to west and break either way."

Pine Trees Sway

He got a "Roger" from the fighters. They formed up in a line astern. Then they barrelled down from three thousand feet and as they hit the low points of their dives, you could see the pine trees swaying in the propeller blasts. For fifteen minutes, they worked over the enemy concentration.

We continued our searching at about 500 ft. with this reporter keeping a wary eye upon the air-speed indicator, breathing deeply when, in some of the turns, the speed dropped down to less than a hundred miles an hour.

Soon we saw two F-51's overhead. Buseman called headquarters. "I have two Fox Five Ones in view," he said. "Are they friendly or enemy?" The answer came back: "Enemy."

We went into a steep dive and pulled up inside the F-51's, right on their tails. I asked Buseman if he thought the fighters had seen us.

"Sure," he said, "but they can't do anything about it. I can turn inside them every time. It won't do them any good to go after us and they know it."

He called Discover, leader of the four fighters we had worked with earlier. They attacked out of the sun just over our heads, four against two. It was definitely a victory for the "U. S." planes.

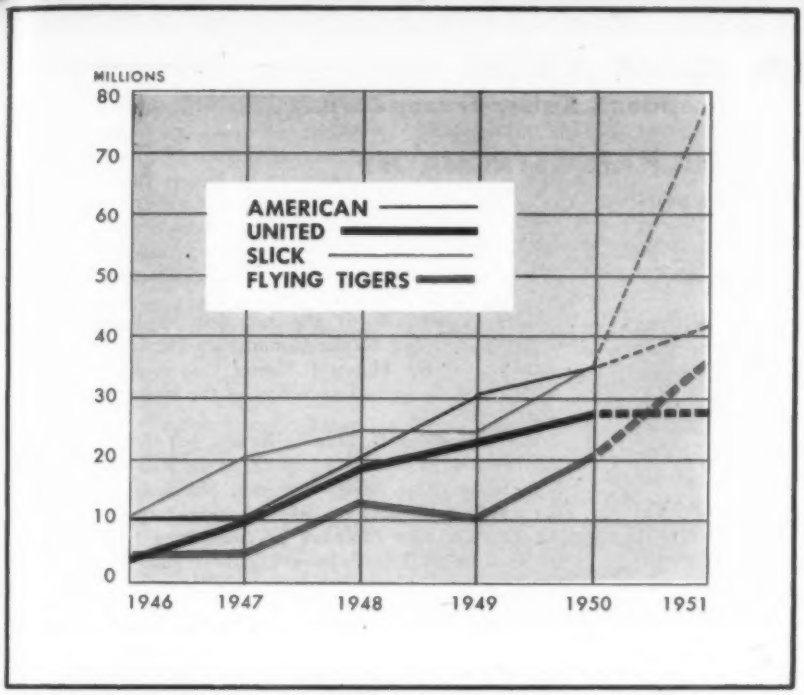
During the next two hours, we directed the Discover flight in to four heavy troop and vehicle concentrations, which they attacked and presumably destroyed. On our way home, we came upon two F-51's diving upon a friendly motor pool.

Buseman reported the attack to headquarters. Immediately we were called by Discover, who had heard Buseman's message.

"Tomohawk," Discover said, "Those Fox Five Ones can't work over anything. We shot them down two hours ago."

Buseman turned around, smiled, and held up his hands in a gesture of despair. Back at Pope Air Force Base, he explained.

"You can see how it is," he said. "This is as close an approximation to real war as we can get, but it's a lot different in Korea. Discover says he shot down those two Fox Five Ones two hours ago. In Korea, you get shot down, you *know* it."



COMPETITIVE TON-MILE RANKS of the four largest freight carriers.

Slick, Tigers Capture Air Freight Lead

Cargo lines haul over 50% of traffic, aided by aggressive selling, loss of airline planes.

THE NATION'S two transcontinental all-cargo airlines, Slick and The Flying Tigers, have been making great strides in hauling an ever-greater portion of air freight.

Not since 1946 have the two all-cargo lines captured more than half of the total business carried by the scheduled industry. Figures for the first half of 1951 indicate they'll end the year with a substantial gain over the top five passenger-carrying lines.

At least part of the reason for the re-emergence of the all-cargo carriers is attributable to Korea. All of the passenger-carrying trunks gave up equipment for the air lift, and invariably this equipment has been in all-cargo service. But Slick and Flying Tigers have continued to be aggressive in their selling and service.

Immediately after the war the two all-cargo carriers were flying nearly as much air freight as all other lines combined. By 1947 this situation began to change and in 1949 Slick and the Tigers were carrying only 30% of the volume of the first seven lines. At the end of the first six months of this year they had carried 53%.

AMERICAN AVIATION estimates a total figure of 215 million ton-miles for all of 1951, with 113 million carried by Slick and Flying Tigers, and 102 million by the Big Five of the all-category carriers, provided current trends prevail.

According to this publication's survey, based on company information and official CAB reports, Slick Airways flew 32,483,892 ton-miles of domestic air freight in the first six months of 1951, compared with 17,936,000 ton-miles reported by American. Not far behind the latter, with 15,126,257 ton-miles, was The Flying Tiger Line.

Historically, the second half of the year accounts for about 58% of the year's air freight volume, and on this basis a projection of figures for the first six months would see Slick's volume for 1951 rise to over 77,000,000 ton-miles and American's to approximately 43,000,000 ton-miles.

However, there may not be that much of a gap between the two leaders at year's end, for Slick is believed unlikely to do much more than register the regular seasonal gains, while American could conceivably fly nearly twice as many ton-miles of cargo in the last six months of this year as it flew in the January-June period.

This prediction is based on two factors in American's cargo operation: (1) increased capacity, and (2) aggressive promotion. American recently got back two of the DC-4's it had lost to the air lift, and these, together with its new DC-6B's, give it much more cargo capacity than it has been able to offer in months. Also, it is staging an intensive cargo sales campaign.

Getting back to the survey, it shows that domestic freight of the seven carriers under study rose from 35,002,005 ton-miles in 1946 to 152,617,303 ton-miles in 1950, with traffic for the first six months of 1951 indicating a volume for the year of more than 200,000,000 ton-miles for the group.

How the 'Big Seven' Compare as Freight Carriers

Revenue ton-miles

Carrier	1946	1947	1948	1949	1950	1st Half 1951
Slick	11,198,594	21,669,651	25,581,493	24,247,012	35,700,800	32,483,892
Flying Tigers	5,793,270	5,788,476 (1)	13,399,001	11,942,239	21,435,309	15,126,257
Sub total	*16,991,864*	*27,458,127*	*38,980,494*	*36,189,251*	*57,136,109*	*47,610,149*
American	10,475,523	11,178,731	21,822,054	31,845,434	35,304,598	17,936,000
United	4,445,080	10,091,734	19,807,208	23,727,149	28,034,278	11,949,710
Eastern	320,450	2,338,880	5,730,243	9,114,101	9,751,213	2,594,778
Capital	572,400	2,433,202	5,199,014	7,450,410	8,586,983	2,568,238
TWA	2,196,688	4,920,493	9,999,732	12,035,978	13,804,122	7,722,000
Sub total	*18,010,141*	*30,963,040*	*62,558,251*	*84,173,072*	*95,481,194*	*42,770,726*
Total All Carriers	**35,002,005**	**58,421,167**	**101,538,745**	**120,362,323**	**152,617,303**	**90,380,875**

(1) Not included are 33,494,000 revenue ton-miles flown in 1947 under an Air Transport Command contract.

Interview—with **EDGAR KAISER**
President, Kaiser-Frazer Corp.

MICHAEL STROUKOFF
Executive V.P., Chase Aircraft Co.

Chase Aircraft Co. was organized by Michael Stroukoff during the war as a builder of gliders. After the war it went into the assault transport (powered glider) business. On May 10 of this year, Kaiser-Frazer Corp., which had a license to build Fairchild C-119's at Willow Run, purchased 49% of Chase for $2,500,000. The Chase firm, which now holds a large contract to build C-123's for the Air Force, has Edgar Kaiser, K-F's president, as president and Stroukoff as executive vice president and chief engineer in charge of research and development.

Edgar Kaiser, 42, is also president of Kaiser Industries, Inc., and Kaiser Community Homes, is vice president of the Henry J. Kaiser Co., a director of Kaiser Steel Corp. and an officer of the Kaiser foundations.

Michael Stroukoff, born in Russia, left that country in 1921 after serving as a captain in the Russian army. An architect and bridge designer, Stroukoff got into the airplane business in 1943 when he formed Chase Aircraft Co. The company has completed five major projects for the USAF, including three gliders and the C-122 and XC-123 twin-engined transports.

New Plane Production Team

Q. Mr. Kaiser, may I ask the motive for Kaiser-Frazer buying into Chase Aircraft?

K: That's a good question. An independent in the automobile business has a very difficult time because it is competing against well-established auto companies. It is our opinion that we will strengthen K-F by diversification; and we believe that one of the untouched fields is the air cargo field. It just hasn't been scratched on the surface yet, and a good diversification route for K-F is to have an interest in the aircraft business.

Q. There have been rumors that the Chase stock is held 49-51. There are also rumors of a 49-49% stock split with an outside interest of 2%.

K: The correct ratio is 49% Kaiser, 51% Stroukoff.

Q. The only place where the split occurs is in the board of directors?

K: Yes. You see, we don't consider it a 50-50 board. We think about it as 100% Chase.

S: For the past ten years, too much of my time was absorbed by administrative and business details, thus not allowing me to devote as much time to engineering as I wanted to.

I now have a partner who can undertake the burden of administration and production, thus freeing me for the engineering work which is my principal interest. Therefore, we make a good combination.

Joint Operation

Q. In that case we can consider that the business side of Chase today is Kaiser?

K: No, it is a joint operation. Mike Stroukoff is an engineer. It's his brains and his ideas and his development that have made Chase possible. That is his prime interest. For him the C-123 is a great airplane, but he doesn't stop there. He sees new airplanes in the future. Kaiser-Frazer has production to concentrate on; it has some administrative responsibilities; but on all those matters both Chase and Kaiser-Frazer are in accord.

Q. Is it proper to say that your interest in Chase and your work as a subcontractor to Chase are actually divorced and your purchase of 49% is strictly a business deal?

K: Correct. That was accomplished between Mike Stroukoff, my father and me before any of us had any idea that the planes were going to be under subcontract to K-F.

Q. Do you anticipate building up the administrative end of the business?

K: Certainly, we will require additional administrative personnel as well as personnel in all other departments. The production program now underway requires a general expansion of the company. We have, for instance, added a large number of engineers in the past few weeks. All other departments will expand in proportion. Jointly we have said there are certain unfilled administrative positions in our organization. Whom do we put in them? It is not our desire to take people out of either the Kaiser companies or K-F and put them into those positions. The job really is to find the right people. The K-F work on the C-123 is a subcontract operation, and K-F intends only to stay in the aircraft business so long as its facilities are required in the national defense program.

Q. And then you expect to get out?

K: That is right, as a direct aircraft manufacturer; however, Kaiser-Frazer will assist in the development of aircraft in Chase as a Chase Aircraft operation. Kaiser-Frazer has no plans to be engaged directly in the aircraft business, except as they have an interest in Chase Aircraft.

Q. Would you give us an idea of what your organization is within Kaiser-Frazer in regard to your aviation activities? Who are your principal lieutenants and their general lines of duty?

K: Harvey Smith is Works Manager in charge of aircraft at Willow Run. Tim Bedford is in charge of the K-F

'. . . A Great Future for the C-123A Jet Transport'

Engine Division in Detroit and Dowagiac, Mich.—both automotive and aircraft. Ned Ordway and Duncan Gregg direct the Boeing job [still unannounced]; Ned Ordway and Bill Cannon supervise the Lockheed job [P2V components] in Oakland, Calif.

Q. You haven't combined all your aircraft operations under one man?

K: Yes, John Hallett, K-F's General Manager. He is not solely limited to aircraft, but the aircraft managers of the various divisions report to Hallett.

Q. What percentage of the actual work on the Chase C-123 will be subcontracted to K-F?

K: In dollar volume, about 50-50. Chase will do the procurement.

Q. Does Kaiser plan to subcontract parts further?

K: Yes, but not to any great volume, because we want to utilize to the fullest extent Chase's facilities at Trenton. That will substantially reduce sub-contracting by Kaiser-Frazer.

KARSH PHOTO

Edgar Kaiser

First C-119 This Fall

Q. Could you give us a summary of your plans on the Fairchild C-119 and Chase C-123 production?

K: The first C-119 should be out the door by late fall. Delivery of the first C-123 in mid-'52. We will still be building C-119's in mid-'52 as well as C-123's As the C-119's phase out (in early 1953 Fairchild's Chicago plant will take over), the C-123's will go in on the other line.

Q. You said your first C-119 would go out the door in late fall. That, I presume, is with Fairchild parts. When is the first C-119 K-F will build from the ground up due to be rolled out?

K: Shortly after the first of the year.

Q. I understand that at one time K-F was interested in getting a Boeing B-47 licensing agreement.

K: No, let's put it the other way. Willow Run was scheduled for the B-47 program. We spent months on the B-47 at the request of the Air Force. They later shifted us over to the C-119 program.

Q. Wouldn't that mean you are still considered a secondary source for the B-47?

K: I don't know.

Q. All of the plant devoted to automobile production right now could be converted to B-47 work, or any other plane?

K: It could be done. However, since we will have tooled for C-123 production and, provided there is a requirement for additional C-123's, I would assume they would expand the C-123 program at Willow Run.

Q. There have been reports Chase may have to move out of its Trenton plant. What would be its plans then?

K: Chase Aircraft is going to have a home. We are now studying and evaluating the location. It would appear at this time that Trenton will be the final site. Let's visualize the day when the Air Force no longer requires the use of Willow Run facilities for aircraft assembly operation, either directly or as a subcontractor for Chase Aircraft. Visualize also Chase securing contracts to build more planes. The supervisory force that has been working on Kaiser-Frazer subcontract for Chase will be available for Chase Aircraft's production organization. Since Kaiser-Frazer is continuing its automotive production, we, therefore, have both aircraft and automotive supervision available, so that the aircraft production organization is available for Chase as required. The goal is to build Chase and an organization with it. Whoever comes out of the aircraft operation at K-F—a good aircraft production man—will have the opportunity, if he so desires, to stay in aircraft production so long as Chase has work available.

S. We are in agreement that Chase will have a permanent home of its own. We are working toward that end right now. We hope and expect to have something to announce in the next few weeks.

Q. Can Willow Run be ruled out as one of these possible sites?

K: Yes.

S: Yes, completely.

Q. Just what work will be done at Trenton so far as the C-123 is concerned?

S: That will, for the most part, be dictated by two factors —available production space in Trenton and the problem of shipping. We plan to utilize to the fullest extent all space we have in Trenton to manufacture items which are not too bulky to be shipped conveniently.

Main Show Is Chase

Q. Won't this contract be unique in the aircraft industry in that the prime contractor (Chase) will not assemble the final plane in his own plant?

S: I don't believe it is a unique contract.

K: Chase is the prime contractor and Chase is responsible for the finished airplane; nobody else. When the plane is going out the door, it is a Chase airplane.

Q. Chase does all the procurement?

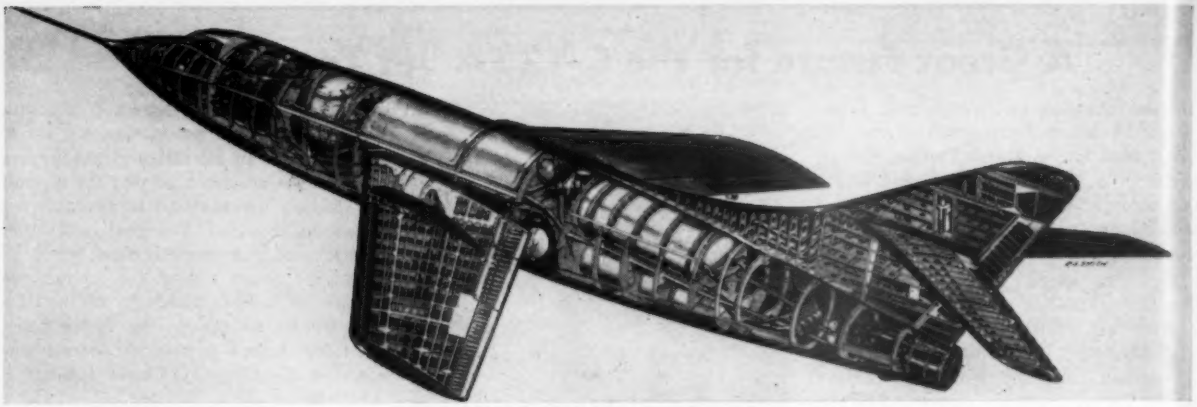
S: Yes, and we are going to manufacture many subassemblies.

Q. Do you feel that there is an active possibility that the Chase C-123A, the turbine powered version of the C-123, will go into production?

S: I firmly believe there is a great future for the C-123A jet transport. As you so well know, any plane that is developed must go through a test program before it goes into production. The C-123 has successfully undergone all tests and is now in production. In the case of the C-123A jet transport, it is still in its test program. It has completed Phase 1 tests and is now in the hands of the Air Force for Phase 2.

Q. It appears that Chase put over a good deal in getting the G-20 glider equipped with jet engines. How did that actually come about?

S: The Air Force made a decision to do it. They made their decision on the basis of what they saw from performance of the C-123 and studies of the installation which were presented. It is our job and our desire to develop new aircraft. It happened because people had faith. If you have an idea and you know it is good, and you stick with it, surprising things can happen.



FIRST DETAILED VIEW of the Navy's Douglas D-558-II Skyrocket is shown above. The plane, which recently climbed to an altitude of around 78,000 ft., had its jet engine removed some time ago and is now powered by a Reaction Motors rocket engine.

Planes in the News

F2H-2P BANSHEE, developed by the McDonnell Aircraft Corporation of St. Louis, Mo. for the Navy, is the first jet carrier photographic airplane in the history of Naval aviation. Extended nose houses six types of interchangeable cameras, adaptable to various types of missions. F2H-2P is a modification of the twin-jet, 600-mile-per-hour F2H-2 Banshee fighter.

THE CONVAIR-LINER 340 prototype nears final assembly in Convair's San Diego Plant. Long fuselage and single-section wing were mated a week earlier than planned. Wing leading edges, flaps, landing gear, and nacelles will be installed during the next few weeks. First flight for the 44-passenger 340 is scheduled for October. Meanwhile production work to fill orders for more than 100 of these transports is being pushed.

Are Airlines Ordering Too Many Planes?

Program seems sound in view of equipment retirements and heavy traffic volume.

By WILLIAM D. PERREAULT

COMPETENT leaders in the airlines are looking with nervous eyes toward the rapid build-up in airline equipment now taking place. In the 24-month period ending December 31, 1952, the 16 domestic trunk airlines will have taken delivery on 256 new airplanes—a 33% increase in flying units.

These aircraft are faster and larger than the planes they will replace in most instances and in some cases are not meant as replacements. Will this result in a surplus of equipment with forced reductions in utilization and load factors and consequent economic losses such as those experienced in 1946-47?

To answer this question, AMERICAN AVIATION made an extensive survey of the new equipment picture. The results, shown in tabular form in the accompanying tables, indicate that:

• **A 38.9% increase in available seat miles** will have been introduced into operation by the scheduled domestic trunk airlines during this 24-month period.

• **89 four-engined and 167 twin-engined** planes are included in this total. Specifically, there will be a 39% increase in twin-engined equipment and a 25% increase in the four-engined equipment.

• **16 million additional daily seat miles** will be made available by these 256 airplanes. This is counteracted, however, by a known loss of over 40 million seat miles per month by the sale or military recall of equipment since the first of this year.

High Load Factors

• **Load factors** for airlines scheduled to receive the bulk of this equipment have been running abnormally high. During June, eight major airlines were operating with load factors in excess of 70%, the traditional dividing line between adequate and inadequate seating capacity. One airline finished the month with a higher than 90% load factor for the 30-day period.

• **Military demands** may yet cut into the airline equipment picture, either on a charter basis or by outright conscription.

• **Some improvement in traffic** must be achieved if these airplanes are to be absorbed without noticeable economic losses. The 37.2% increase in airline traffic among these domestic operators during the first six months of this year, as contrasted with the same period in 1950, leads observers to feel that this is quite possible.

It might be noted that less than 10% of the new equipment scheduled for this period will be delivered during 1951. This, coupled with the 37.2% increase in traffic for the year to date, means the airlines will continue to be short of equipment through this year even if there is a normal drop-off in traffic during the winter. Based on last winter's experience, such a drop-off is unlikely.

By the spring of 1952 the delivery of new planes should be showing some noticeable effects. Eastern Air Lines and Trans World Airlines will both have received a sizeable portion of their Super Constellation and Martin 4-0-4 orders. United Air Lines and Braniff will be getting their first Convair 340's.

The situation must be analyzed by comparing additional seat miles made available by new equipment with known and expected loss of older equipment and possible trends in traffic. During the 24-month period covered by the survey, available seat miles per month will be increased by 509,633,511, discounting possible equipment transfers.

Actually, such transfers and sales have already taken place within the period. Eastern Air Lines has lost 18 of its Douglas DC-4's back to the Navy. Twenty of the Martin 2-0-2's have been removed from service and sold or leased.

These two moves represent a reduction of 65,385,660 available seat miles per month in scheduled domestic trunk line operation. Over 40 million of these seat miles are involved in the EAL/Navy DC-4 recall, the remainder by the withdrawal of the 2-0-2's from this class service.

By the time mid-1952 arrives, several of the big operators of Douglas DC-3's should be in a position to sell these planes.

Long the backbone of commercial airline operations and still the only air-

Equipment Summary, 1951-52

	March 30, 1951 Planes in Use	Dec. 30, 1951 Planes Added	Percentage Increase	Dec. 30, 1952 Planes Added	TOTAL Planes Added 1951-52	Percentage Increase
Four-Engined Equipment						
Douglas DC-4	134	0	0	0	0	0
Douglas DC-6	114	24	21%	30	54	47%
Lockheed Constellation	90	17	18%	18	35	38%
Boeing 337	17	0	0	0	0	0
Totals	355	41	11.5%	48	89	26%
Twin-Engined Equipment						
Douglas DC-3	281	0	0	0	0	0
Lockheed Lodestar	11	0	0	0	0	0
Martin 2-0-2	32	0	0	0	0	0
Martin 4-0-4	0	34	100%	66	100	100%
Convair 240	103	0	0	0	0	0
Convair 340	0	0	0	67	67	100%
Totals	427	34	8%	67	167	39%
Totals, All Types	782	75	9.5%	133	256	33%

EQUIPMENT PICTURE for the domestic trunk airlines is presented in this chart showing the number of planes of each type in service with the airlines early in 1951, the number scheduled for delivery in 1951 and 1952, and the percentage of increase by types.

Fleet Growth in Seat Miles

Daily Seat Miles Added

Month and Year 1951	Douglas DC-6 (New)	Lockheed Constellation (New)	Martin 4-0-4 (New)	Convair 340 (New)	Total	Total Daily Seat Miles Available	Total Monthly Seat Miles Added	Total Monthly Seat Miles Available
Jan.	303,948	226,926	.....	.....	530,874	43,589,536	16,457,094	1,324,143,174
Feb.	202,632	.....	.....	.....	202,632	43,792,168	5,673,696	1,329,816,870
March	303,948	113,463	.....	.....	417,411	44,209,579	12,939,741	1,342,756,611
April	405,264	226,926	.....	.....	632,190	44,841,769	18,965,700	1,361,722,311
May	303,948	226,926	.....	.....	530,874	45,372,643	16,457,094	1,378,179,405
June	303,948	340,389	.....	.....	644,337	46,016,980	19,330,110	1,397,509,515
July	202,632	.....	.....	.....	202,632	46,219,612	6,281,592	1,403,791,107
Aug.	202,632	113,463	.....	.....	316,095	46,535,707	9,798,945	1,413,590,052
Sept.	101,316	.....	41,400	.....	142,716	46,678,423	4,281,480	1,417,871,532
Oct.	.....	119,136	331,200	.....	450,336	47,128,759	13,960,416	1,431,831,948
Nov.	.....	238,272	496,800	.....	735,072	47,863,831	22,052,160	1,453,884,108
Dec.	.....	357,408	538,200	.....	895,608	48,759,439	27,763,848	1,481,647,956
1952								
Jan.	202,632	680,778	331,200	.....	1,214,610	49,974,049	37,652,910	1,519,300,866
Feb.	202,632	340,389	331,200	.....	874,221	50,848,270	6,993,768	1,526,294,634
March	202,632	226,926	331,200	52,290	813,046	51,661,316	25,204,426	1,551,499,060
April	.....	340,389	331,200	209,160	880,749	52,542,065	26,422,470	1,577,921,530
May	202,632	340,389	331,200	313,740	1,187,961	53,730,026	36,826,791	1,614,748,321
June	405,264	340,389	372,600	418,320	1,536,573	55,266,599	46,097,190	1,660,845,511
July	202,632	.....	331,200	418,320	952,152	56,218,751	29,516,712	1,690,362,223
Aug.	607,896	.....	331,200	418,320	1,357,416	57,576,167	42,079,896	1,732,442,119
Sept.	709,212	.....	124,200	418,320	1,251,732	58,827,899	37,551,960	1,769,994,079
Oct.	101,316	.....	.....	418,320	519,636	59,347,535	16,108,716	1,786,102,795
Nov.	101,316	.....	.....	418,320	519,636	59,867,171	15,589,080	1,801,210,875
Dec.	101,316	.....	.....	418,320	519,636	60,386,807	16,108,716	1,817,319,591

AVAILABLE SEAT MILES for each month during 1951 and 1952 as influenced by the delivery of new equipment to the airlines, is presented in this chart which shows the number of seat miles being added with each type of equipment by day and month, with cumulative totals to show their relation to available seat miles already in service.

craft to meet many scheduled airline requirements, the DC-3 has nevertheless shown a consistent record of financial losses for the big airlines in recent years. It is logical to assume that these planes will be replaced as soon as possible.

Seat Miles Lost

Previous losses of EAL's 18 C-54's and Northwest's Martin 2-0-2's account for 65,385,660 available seat miles. The 150 DC-3's represent another 95,029,500 available seat miles or a total of 160,415,160 seat miles per month.

Both load factors and aircraft daily utilization are running unusually high at present. Airline service is suffering by these load factors.

Continued high utilization may therefore be desirable, but load factors of the present level are not. A 10% reduction in load factor will do much toward absorbing the additional seat miles being made available by new equipment. Best indications are that the scheduled domestic lines, trunks only, will handle 10.5 billion passenger miles this year. Thus a 10% spread of existing loads would move 87,500,000 passenger miles per month to new equipment.

These three factors—equipment already lost, DC-3's likely to be replaced by the new equipment, and a 10% reduction in load factors by increased schedules—will absorb 247,915,160 of the additional 509,633,511 seat miles being added in the 24 month period. This ignores the rapid growth in traffic which is apparent in the month by month record of the airlines. Nor does it deal with a sizeable number of DC-4's and DC-3's which will probably be obsoleted.

'Surplus' Needed

Equipment deliveries do not stop in 1953. Actually, there are a number of Douglas DC-6B's, Lockheed Super Constellations and Convair 340's scheduled for 1953 delivery and not shown on the chart. It should be borne in mind that the airlines, if they are to take expansion in stride, should have a certain minimum "surplus" of equipment immediately following completion of any re-equipment program.

The airline re-equipping program, then, is apparently sound. At present, the airlines are not equipped to give proper service. But, as equipment deliveries enable current commitments to be handled readily, the airlines will be able to displace prewar and wartime aircraft with more productive planes, thus improving service and increasing their economic returns.

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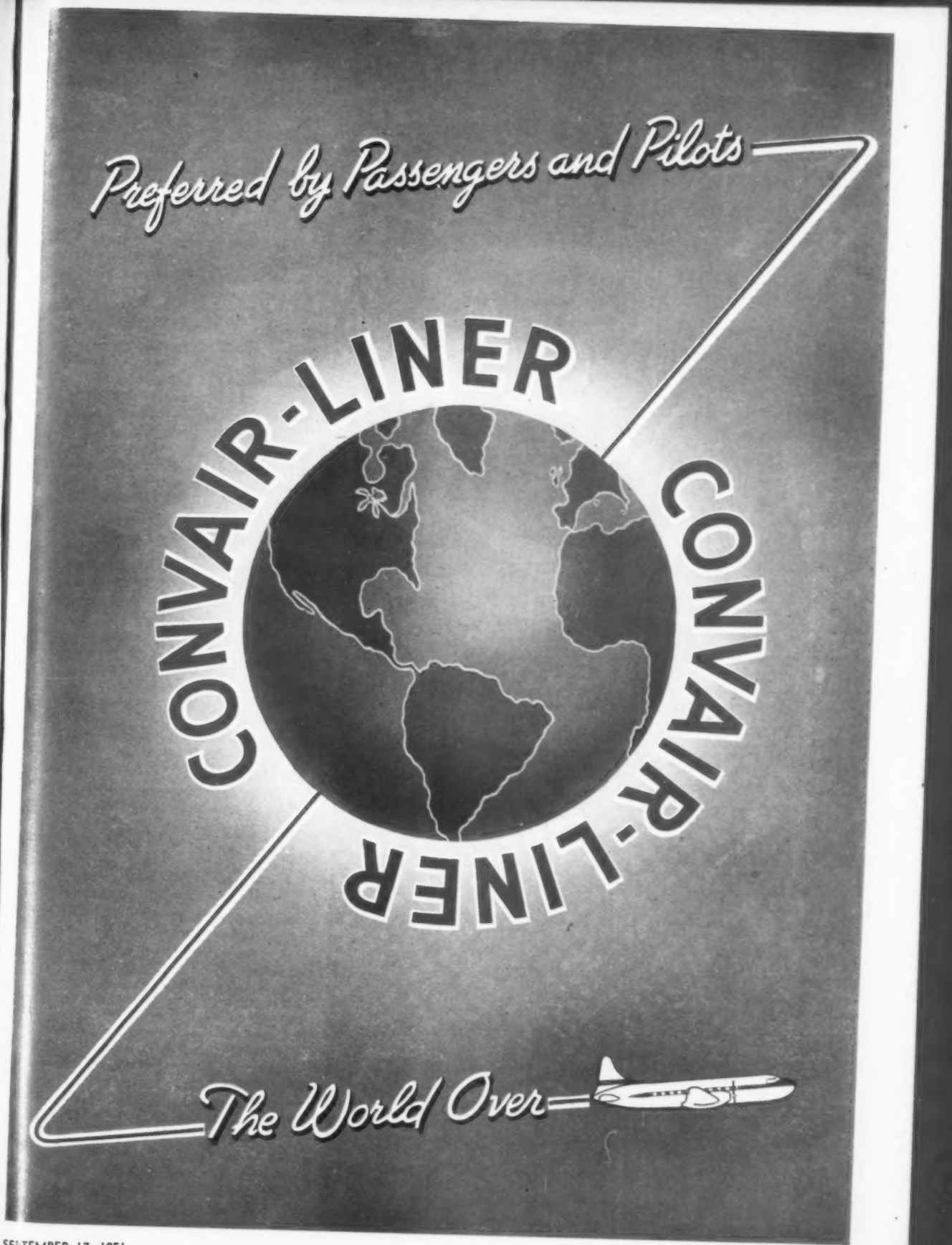
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New C-46 Limitations Opposed by Non-Skeds

Civil Aeronautics Board's proposal to lower the allowable gross weight of the C-46 in passenger operation, if ratified, will have important economic effect among large irregular carriers.

Under the present allowable gross of 48,000 pounds, here's the way non-scheduled operators figure their C-46 trips:

Basic weight of the average high-density E or F is approximately 31,000 pounds. Put 10,000 pounds as weight for passengers and baggage. The remainder — a satisfactory margin — is available for crew, oil and fuel.

But a reduction from 48,000 to 45,800 pounds as proposed to become effective in October represents 2,200 pounds less of passengers or fuel. Either way it translates into dollars.

Second phase of the proposed gross reducing program, down to 43,500 pounds in October of 1952, would simply put the airplane out of the high-density business.

Two Safety Levels?

The proposal will be opposed by the Air Coach Transport Association and companies and individuals operating the C-46 in passenger service. A point which immediately presents itself is this: If the airplane is safe only for 43,500 pounds, why continue to risk the safety of the public until October, 1952? Another is that if the airplane is unsafe for passengers at 48,000 pounds, why permit pilots to continue to risk their safety by flying at 48,000 pounds in freight service?

CAB's attention was focused on the C-46 as a passenger craft because of its reputedly poor aerodynamics in conditions of low speed and high power. These are conditions existing in take-off and in single-engine cruise.

Some weight-conscious operators will not be hit so hard as others by a lowering of the allowable gross because in their high density conversions they have held the weight down to around 30,000 pounds. One carrier, by making interior fittings of Balsa core plywood and otherwise calculating every pound came out with an empty weight of 29,996. By and large, however, 31,000 pounds is the average for the airplanes which have been certificated for passenger operation at the 48,000-pound gross. And since it seems evident that the biggest proportion of the non-scheduled revenue dollar today is riding in C-46 equipment, any development which will reduce load potential is bound to affect an economic change in the industry.

Airlines Can Still Attain Good Safety Record in '51

The airlines still have a chance of maintaining a good safety record for this year, despite the seven fatal accidents occurring among the scheduled domestic airlines at a cost of 141 passenger lives.

Principal factor will be the record-breaking revenue passenger miles flown as contrasted with previous years. Reliable estimates indicate that the 1951 revenue passenger mile total for the domestic airlines will pass the 10.5 billion mark, up more than two billion over last year.

The domestic airline record to date, based on estimated traffic figures through August, will show fewer than two fatalities per 100 million passenger miles, as contrasted with 1.1 in 1950.

Accident record during 1951 to date:

National DC-4, Jan. 14, at Philadelphia, Pa., with six passenger fatalities.

Northwest M-202, Jan. 16, at Reardon, Wash., with seven passenger fatalities.

Mid-Continent DC-3, March 2, at Sioux City, Iowa, with 12 passenger fatalities.

Southwest DC-3, April 6, at Santa Barbara, Calif., with 19 passenger fatalities.

United DC-3, April 28, at Fort Wayne, Ind., with eight passenger fatalities.

United DC-6, June 30, at Fort Collins, Col., with 45 passenger fatalities.

United DC-6B, August 23, at Decota, Calif., with 44 passenger fatalities.

Join American Aviation

Richard Fuller, recent addition to the editorial staff of AMERICAN AVIATION, was a Navy pilot during World War II with a year's experience overseas in scout-bombers.

His industry experience includes three years with General Electric Co., Schenectady, N. Y. as a writer on scientific subjects, including new product information, and as contributor to various G-E publications. Most recently he has been engaged in free-lance writing, some of which was for the Air Force's forthcoming "Tactical Air Power" booklet.

Larry Brettner, mail promotion manager with McGraw-Hill Publishing Co. for the past three years, has joined AMERICAN AVIATION as circulation promotion manager. His 21 years of promotional experience includes national magazines, business services and books. He was formerly assistant to the circulation manager of the *Wall Street Journal* and circulation promotion manager of *Modern Industry* magazine.

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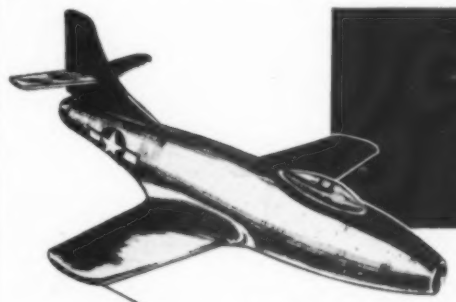

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Altitude Record: Why Won't Navy Tell?

By James J. Haggerty, Jr.

THAT peculiar bugaboo of the military services known as "security," whereby a "classified" stamp is slapped indiscriminately on items of military information, is about to cost the Navy an official world's altitude record.

Last month the Navy's Douglas D-558-II Skyrocket, a rocket-powered special research plane, roared to an altitude in the vicinity of 78,000 feet, a good mile higher than man had ever climbed before and thousands of feet above the previous record ever attained by a powered aircraft. The previous record, which had stood since 1935, was 72,394 feet; it was attained in a balloon by (then) Army Captains Orvil Anderson and Albert Stevens.

Now the Navy finds itself in the peculiar position of being unable to claim an official record, for the rather silly reason that the Department of Defense will not permit the Navy to tell exactly how high the plane flew, although, with the remarkable inconsistency characteristic of military security, it may be said that it bettered the previous record. This is because some security wizard, in an enlightened moment, drew up a directive stating that attainment of altitudes above 50,000 feet may not be discussed.

Didn't Meet NAA Specs, But . . .

The D-558-II was not out after an official record and it did not meet the specifications demanded by the National Aeronautic Association. NAA requires that a record-seeking plane carry sealed barographs to record the exact altitude. Obviously, a special research plane like the Skyrocket, cramped for space, could not comply with the requirement. But the altitude of the D-558-II was very accurately measured by sensitive radar and there is no question as to the authenticity of the record. NAA and its international body, the Federation Internationale Aeronautique, might have been persuaded to recognize the record officially on the basis that the D-558-II could not possibly have met the official record requirements, nor will any other plane capable of setting a new record in the near future be able to meet them because of space and weight restrictions.

But, even if the two record-promulgating bodies were willing to waive the official record requirements and accept the radar calibrations made by the Navy and Douglas Aircraft Co., they obviously could not accept a record without being told what it is. It would hardly be kosher to enter a record of "more than 72,394 feet" in the official books.

Just why the exact altitude the plane attained cannot be released appears to be a mystery to everyone connected with it. If it were announced that the plane had reached 78,000 feet, just what would the Russians do with that information? Would they dash out immediately and build a plane that would go 79,000 feet? Or would they calibrate all their anti-aircraft guns to shoot 78,000 feet? In either case, it seems logical to assume that they are already at work in that direction. They are hardly tieing in their design efforts with our press releases. If they can build a plane which will go higher than 78,000 feet, they will do it without waiting for us to give them a mark to shoot at. If they can build ack-ack to hit a plane at that altitude, they will do it, whether or not we have planes which can fly that high. So why all the mystery?

"Well," said one officer to whom we posed the question, "it gives an indication of performance trend. We're telling them how far we've progressed in altitude attainment."

But, we replied rather acidly, doesn't the official word that it flew higher than 72,394 feet constitute a performance trend? It does, he answered limply.

Further, any altitude attained by the D-558-II is hardly an indication of a trend in combat aircraft. The D-558-II is strictly a research vehicle, with a short-range power plant incapable of combat operation and stripped of all combat armament. It will not be a production airplane, although it might provide data for a production plane well in the future.

So, because there is in existence a directive, that powerful weapon of military bureaucracy, the old 1935 Anderson-Stevens altitude record will probably remain on the books, a monument to the lack of thinking connected with "security." Conceivably, it could remain there forever, as far as the U. S. is concerned, since the only planes capable of flying that high are military and subject to the directive.

Could Have Gone Higher

Incidentally, while on the subject of the Skyrocket, although 78,000 feet seems a staggering altitude to attain, it is well below the limit of which the plane is capable. Had Douglas test pilot Bill Bridgeman so desired on his record flight, he could have done considerably better by climbing vertically. But he was not attempting just to set an altitude record; he had to make a high-speed, level flight run after attaining it, so therefore he had to have some fuel left after reaching altitude.

Steps to provide the D-558-II with additional fuel capacity have already been taken, not by modifying the plane, but by topping off the tanks in the air. The D-448-II is powered by a Reaction Motors rocket engine which uses liquid oxygen and alcohol as fuel. In the current method of conducting the research program, the plane is carried to an altitude of 35,000 feet by a Boeing B-29, then released to continue on its own power. But in the course of the long climb, considerable fuel capacity is lost because the oxygen evaporates.

So Douglas and the Navy have now decided to refill the tanks just before the D-558-II is released from its carrier, cancelling out the evaporation factor and providing considerable extra flight duration. Even a few extra seconds of flight are important, since it takes the plane only 10 seconds to accelerate to the speed of sound. With the topping-off system and with pure vertical climb, the Skyrocket can undoubtedly get well above 80,000 feet if the Navy and the National Advisory Committee for Aeronautics decide to run some maximum altitude tests.

PAA adds 3 stations to global radio net

The Collins high frequency radio equipment in this 18,000-pound load which went aboard at La Guardia field has now extended PAA radiophone operations throughout Africa. The three new stations are set up at Leopoldville in the Belgian Congo, Salisbury in Southern Rhodesia, and Johannesburg, South Africa.

Included for each station are a Collins 231D-20 Autotune* transmitter and four 51N-2 fixed frequency receivers with remote control units, now standard throughout the Pan American World Airways system.

*Reg. U.S. Pat. Off.

For land based radio communications, it's . .

COLLINS

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Production Spotlight

More Expansion Loans: Four firms in the aircraft industry have been granted loans totaling $4,771,000 for expansion purposes by the Defense Production Administration. They are:

Bill Jack Scientific Instrument Co., Solana Beach, Calif., manufacturer of aircraft instruments, $2,000,000.

Varian Associates, San Carlos, Calif., makers of microwave tubes for radio and radar sets, $1,520,000.

Lear, Inc., Grand Rapids, Mich., manufacturer of aircraft electronics, $863,000.

Kellex Corp., New York, N. Y., research, development and design company, $388,000.

The DPA loans are disbursed through Reconstruction Finance Corp. and are made available only when private credit is not obtainable on reasonable terms.

Postwar High: *Aluminum production for the first half of 1951 was at its highest level since the first half of 1944, the Aluminum Association reports. It is also 18% higher than the first six months of 1950. Production through June 30, 1951, totaled 807,181,724 pounds; for June alone it was 134,906,971 pounds.*

Nine Plants: Rolls Royce's 7,200 pound thrust Avon jet engine is now being built in six different plants in the United Kingdom, as well as in three foreign plants under license. Rolls Royce is building the engine at three of its own plants: the main plant at Derby and two subsidiary plants at Hillington and East Kilbride. In addition, Bristol Aeroplane Engines, Ltd., and D. Napier & Son, Ltd., are producing the Avon. The sixth U. K. plant in production is that of an auto manufacturer, Standard Motor Co. at Coventry.

North American Plans: *North American Aviation has taken a five-year lease on a new 60,000 square-foot building on a new industrial tract facing Los Angeles International Airport. The building will be used for tail assembly production for the F-86D jet all-weather fighter. The company has also leased a 15,000 square-foot building in Inglewood, Calif., for a machinery rehabilitation and rebuilding program.*

Thompson at Danville: Thompson Products, Inc., has purchased a new plant in Danville, Pa., a 140,000 square foot steel fabricating plant formerly owned by National Radiator Co. Thompson will use it for aircraft component manufacture.

Simmonds 'V' Loan: *Simmonds Aerocessories, Inc., Tarrytown, N. Y., has completed negotiations for a $700,000 "V" loan for expansion. The loan will be administered by Manufacturer's Trust Co. of New York City. Simmonds is currently engaged in the design and manufacture of a number of advanced electronic, hydraulic and mechanical items for aircraft.*

Eaton at Battle Creek: Eaton Manufacturing Co. has started production of jet blades in two leased hangars at Battle Creek, Mich., Airport.

Guided Missile Plant: *Consolidated Vultee Aircraft Corp.'s Guided Missile Division is expanding its Pomona, Calif., annex to provide additional temporary space for its engineering laboratory. The division has leased a one-story building with about 15,000 square feet of floor area and a nearby storage lot. Construction materials have started arriving for the $50,000,000 main guided missile plant to be operated by Convair for the Navy Bureau of Ordnance.*

J. J. H.

INDUSTRY PERSONNEL

North American Aviation has picked **Joe Beerer,** its chief technical engineer, as director of the aerophysics laboratory, replacing **Dr. William Bollay,** resigned. **Ed Horkey** replaces Beerer as chief technical engineer. **Ned Root,** publicity manager for Lockheed Aircraft Corp. has become director of public relations for Consolidated Vultee Aircraft Corp. and has been replaced by **Dick Bean,** his former assistant.

C. R. "Jack" Irvine has been named assistant division manager and chief engineer for Convair's Guided Missile Division and **Harold W. Pope** has been selected assistant chief engineer.

Pope

Bendix Radio Division, Bendix Aviation Corp. has chosen **George R. Faustman** as general factory manager. **Donald W. Backoff** was named manager of Ford Motor Co.'s new aircraft accessories plant at Ypsilanti, Mich.

North American Aviation's director of materiel, **Harold Raynor,** has retired and has been replaced by **Rulon Nagely. M. A. Haymore** moves into a similar position at the Columbus division while **Kenneth Pettersen** has been picked to succeed Nagely as NAA's purchasing agent.

Ford Motor Co. has named **William D. Singleton** director of its new B-47 wing plant at Kansas City; **B. W. Rose** plant manager; **Ben D. Mills,** assistant manager; and **Alfred D. Weir** production manager.

E. L. Farmer has been picked administrator of a new estimating department at Consolidated Vultee Aircraft Corp. at Fort Worth.

Maj. Gen. R. C. Coupland (USAF, Ret.) has been appointed manager of the new product development department of the Koppers Co. Metal products Division . . . Buick Motor Division, General Motors Corp., has selected **Robert Irwin** and **John F. Kennedy** managers of the jet engine plants it is building at Flint, Mich. . . . **Charles L. Black** has joined the Washington staff of Hill & Knowlton and has been assigned to the Aircraft Industries Association.

Adm. H. B. Sallada (USN, Ret.) has been appointed plant manager for the Fairchild Aircraft Division . . . Cannon Electric Co., Los Angeles, has selected **Edward E. Magee** engineering representative for the Air Materiel Command, Dayton, and **Franklin Y. Gates** its factory representative for Utah, Montana and Nevada.

Cee-Bee Chemical Co. has added **Robert F. Ghormley** to its sales engineering staff. . . . **Bert Averett** has become maintenance aircraft agent for the 7th CAA region in Seattle.

Charles B. Buckley and **Arnold Johnson** have been elected vice presidents for Weber Aircraft Corp.

A COOL HEAD IN A HOT SHIP

Cooling high-speed fighters or bombers is more than a matter of crew comfort...it's essential for survival. Cooling requirements of combat aircraft are severe. Highly efficient, compact and lightweight refrigeration units are needed to keep cockpit temperatures at desirable levels.

Stratos air cycle cooling units are *engineered* to meet these exacting demands. Extremely compact and very light, they deliver a high rate of flow of cooling air. Production models with air flow capacity ranging from 12 lb/min to 90 lb/min are standard equipment in combat aircraft of the U. S. Navy and the U. S. Air Force. Such high performance aircraft as McDonnell's F2H2 Banshee, Boeing's B-47 Stratojet, North American's AJ-1 Tornado, and the Douglas XA2D Skyshark are equipped with Stratos cooling packages.

Airlines, too, are using Stratos equipment in transport aircraft such as the Constellations of Pan American World Airways, and the Convair Flagships of American Airlines, in which Stratos equipment has proved its efficiency, low maintenance cost, and long period of service between overhauls.

Air cycle cooling package

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Fairchild Aircraft Division, Hagerstown, Md. • Fairchild Engine and Guided Missiles Division, Farmingdale, N. Y.

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Engineering opportunities at Boeing interest me. Please send me further information.

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London Letter

By Richard G. Worcester

THERE is some competition in Britain selling local service airliners. There are two different designs available: one of them, the Handley Page Marathon, has been tried by West African Airways. There is now talk that this and other Colonial carriers may try the other design, the de Havilland Heron. There is now a large stock of Marathons ready to be sold and the question will soon arise of what is to happen after the order is complete. 40 are on order with the Ministry of Supply and so far 33 have flown. One suggestion is that the company should start building Doves which are still in brisk demand both in the U. S. and elsewhere.

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Main question in Britain at the moment is the relationship between civil exports and defense. Officially, dollar exports like the Dove, rank in importance with defense as top priority and all other work comes afterwards. But this policy, if implemented to the letter, would for many firms amount to a complete shut-down on civil work, which is obviously absurd. Exactly which projects shall go ahead, and with what priority, is difficult to determine. What priority, for instance should a civil liner like the Bristol 175 have in relation to military work? And the Heron? There is no real answer, but international events might force an answer.

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U. S. readers may not be aware that the British system of naming and numbering engines and aircraft does, to a limited extent, indicate their progress of development. The new Bristol Olympus BOL-1 turbine for instance (which was released at the end of April) has this clumsy experimental designation. When the engine does its type test it will then be referred to as the Olympus Mk 1 or abbreviated to the Olympus 1. Similarly the Python 1 is ready for service but the Python ASP-2 is not.

Aircraft are named when they are accepted for service and until then are referred to by their manufacturers' serial numbers. If names are given to them at this stage, it could only be a kind of nickname. Up until recently they were all known by their specification numbers until they were handed over to the operators, but it was evidently realized that integration of the specification numbers could indicate too closely the way the minds were working in the Air Ministry and the Admiralty.

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The Chance-Vought FU4 and the Hawker Sea Fury have several things in common; they have high speeds of close to 500 mph; the operators can hang most kinds of warload under the wings and the airplanes still behave properly; they are easy to operate on deck; and they are both still in full production. Both of course have been in Korea and it is difficult to imagine two more effective carrier-based air weapons. It is true the jets are 100 mph faster, but at a heavy price for that margin in all-out performance.

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Despite the nonsense in the newspapers about Britons lazing in Socialist Utopia, working hours in the aviation business in Britain are the same, to within a fraction, as those put in by U. S. workers. Latest industry reports show that in Britain's manufacturing and repairing air industries there are 148,000 people employed. This compares with an April figure of 413,200 in the U. S. manufacturing industry. The number of people in actual production of aircraft and engines in Britain and the U. S. is in close ratio to the relative populations.

In other words, Britain's aviation effort matches that in the U. S. Whenever Americans read of some U. S. production figure, or production target, chances are that Britain has a similar program one-third the size. Allowance must, however be made for greater productivity in the U. S. as a result of more extensive tooling to handle the larger number of production units.

Boeing B-1 flying boat of 1919 vintage, first international mail plane, is dwarfed by U. S. Air Force's new Boeing C-97 Stratofreighter transport.

Out of the past comes the future

Boeing celebrates its 35th anniversary this year. Not old by ordinary standards; but in aviation, it's a whole age – virtually the age of flight.

During those 35 years, Boeing engineers and production men have seen – and played an important part in – the transition from stick and wire "flying machines" to today's comfortable, speedy, commercial transports. They have contributed to the nation's defense with a variety of military aircraft – from tiny fighters of the 20's to the B-17 Flying Fortress and B-29 Superfortress of World War II.

Today the company still pioneers – with planes like the huge Stratofreighter and Stratocruiser, the B-50 Superfortress, the 600-mile-an-hour B-47 Stratojet, the soon-to-appear B-52 eight-jet bomber and highly secret guided missile projects.

Boeing regards the experience gained during its first 35 years as a steppingstone toward continued progress – a solid foundation for meeting the challenges that lie ahead.

For the Air Force, Boeing builds the **B-47 Stratojets, B-50 Superfortresses and C-97 Stratofreighters;** and for the world's leading airlines, Boeing has built fleets of the new twin-deck Stratocruisers.

BOEING

Vice-President of Operations

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Champion Spark Plug Company
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Gentlemen:

A Panagra DC-6 equipped with Champion Spark Plugs has set the commercial record for spark plug life. Running time was 983 hrs., 48 min. of continuous operation!

This record is proof of the dependability of Champion Spark Plugs. Champion's have been an integral part of Panagra's performance for many years.

Very truly yours,

Thomas J. Kirkland
Vice President - Operations

PAYS HIGH TRIBUTE TO DEPENDABLE CHAMPION Spark Plugs!

983 hours 48 minutes—a new commercial record for spark plug life—is the spectacular achievement of Champion R37S-1 Spark Plugs in a Panagra DC-6 equipped with Bendix low tension ignition system.

This record compiled in regular service of Panagra El InterAmericano flights from the U. S. down the west coast of South America to Buenos Aires is eloquent testimony to the absolute dependability of Champion Aircraft Spark Plugs, as Mr. Kirkland's letter states. That's why the majority of air lines—the world's most discriminating spark plug buyers—specify Champions.

Panagra's DC-6 El InterAmericano at Limatambo Airport, Lima, Peru. El InterAmericano flies down the west coast of South America to Buenos Aires, Argentina, daily via Panama, Guayaquil, Lima, and Santiago.

CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO

CAB Finds Non-Sked Crew Untrained for Emergency

According to CAB's latest Accident Investigation Report, the ditching at sea on June 5, 1950, of a C-46 owned by Westair Transport, a non-sked, in which 28 passengers lost their lives, was probably caused by "malfunction of both engines from causes unknown."

The report also found that the captain and the company failed to comply with approved operating procedures by not providing necessary instructions to passengers in use of emergency equipment; the steward, hired the morning of the flight, had not been trained to perform his duties under emergency conditions.

The flight, operating from San Juan, Puerto Rico to Wilmington, N. C. carrying 62 Puerto Rican passengers and a crew of three, sank in one of the deepest parts of the Atlantic 300 miles east of Melbourne, Fla.

First indication of engine malfunction occurred after four hours of flight, when the indicated right engine oil quantity fell from 32 gallons to 20. The left engine then backfired and lost power. Remedial measures were ineffective, and the left propeller was feathered, as Capt. Joe M. Halsey took over the controls from Co-pilot William Holleran.

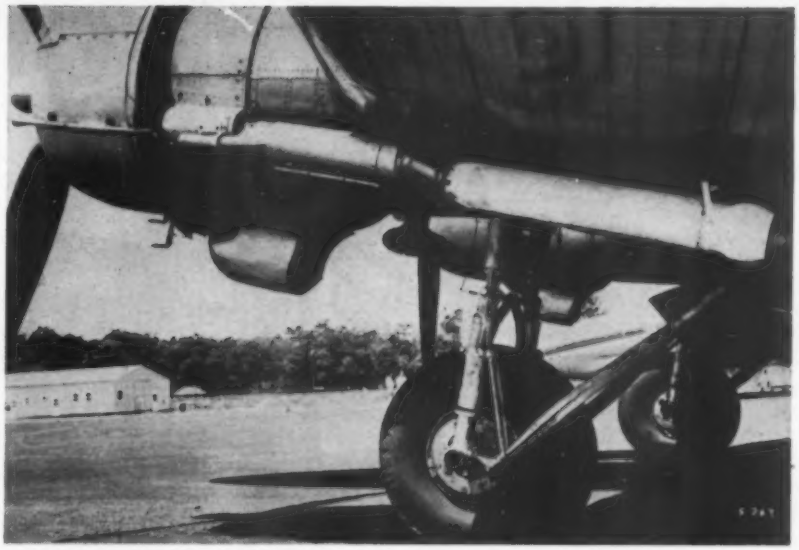
When the indicated oil quantity for the right engine fell from 20 to 15 gallons, the engine began to overheat, with an indicated cylinder head temperature of nearly 300 degrees centigrade.

Exits Not Opened

Halsey began an immediate let-down in order to ditch before complete engine failure occurred. His last message was, "Just about in the drink." He landed in the water at about 9:06 at night. Speed was between 100 and 110 miles an hour; landing lights and flaps were not used. Emergency exits had not been opened prior to the ditching, as prescribed in the company's Operation Manual.

All seven of the 10-man life rafts were thrown overboard, but five floated away in the darkness because their lines were not secured. The three crew members and 34 of the passengers were able to board the two remaining life rafts. Some simply jumped into the sea. The following morning a Navy destroyer located the rafts and rescued the survivors.

CAB found that the steward, employed the morning of the flight, had not been given adequate training in emergency procedure. Passengers said that they had not been instructed to fasten their seat belts and had not been told how to inflate life jackets and life rafts.



FLOWN WITH THE MUFFLER at 100 ft. altitude, only noise audible from this DC-3 was that of the propeller. The device causes no excessive back pressure or high head temperatures.

DC-3 Exhaust Muffler Cuts Noise 60%

Tube-within-tube designed & tested by Aero Sonic and Meteor Air Transport wins CAA's initial okay.

AN exhaust muffler for DC-3 airplanes which in tests has reduced take-off noise by some 60% has been given preliminary approval by the Civil Aeronautics Administration.

Developed by the Aero Sonic Corp. of Brooklyn, N. Y., the new muffler has been service tested by Meteor Air Transport of Teterboro, N. J., both on regular cargo flights and on special flights under severe engine conditions. Tests show that the muffler causes no excessive back pressure nor high head temperatures. Ground observers report that the plane's take-off noise is far quieter with the muffler and that in flight it makes a low whoosh.

The muffler has been developed under the research direction of Eddy D. LaTulippe, general manager of the Areo Sonic Corp. Company president is T. L. Carras.

Effectiveness of the new device has been evaluated with noise-measuring equipment in tests conducted by the College of Engineering of New York University. These tests show that noise level had been reduced as much as 60%, with the effect that, when the plane is flown overhead at as little as 100 feet under normal cruising conditions, the only noise audible, for all practical purposes of evaluation, was that of the propeller.

Design of the muffler is based upon a tube mounted within a tube, with a Venturi-shaped tail pipe to induce a jet action in scavenging gases from the muffling chamber.

The outer stainless steel pipe is insulated with a quarter inch of steel wool blanketing, the inner wall of the pipe being perforated to let noise be absorbed more readily.

Steel Wool Used

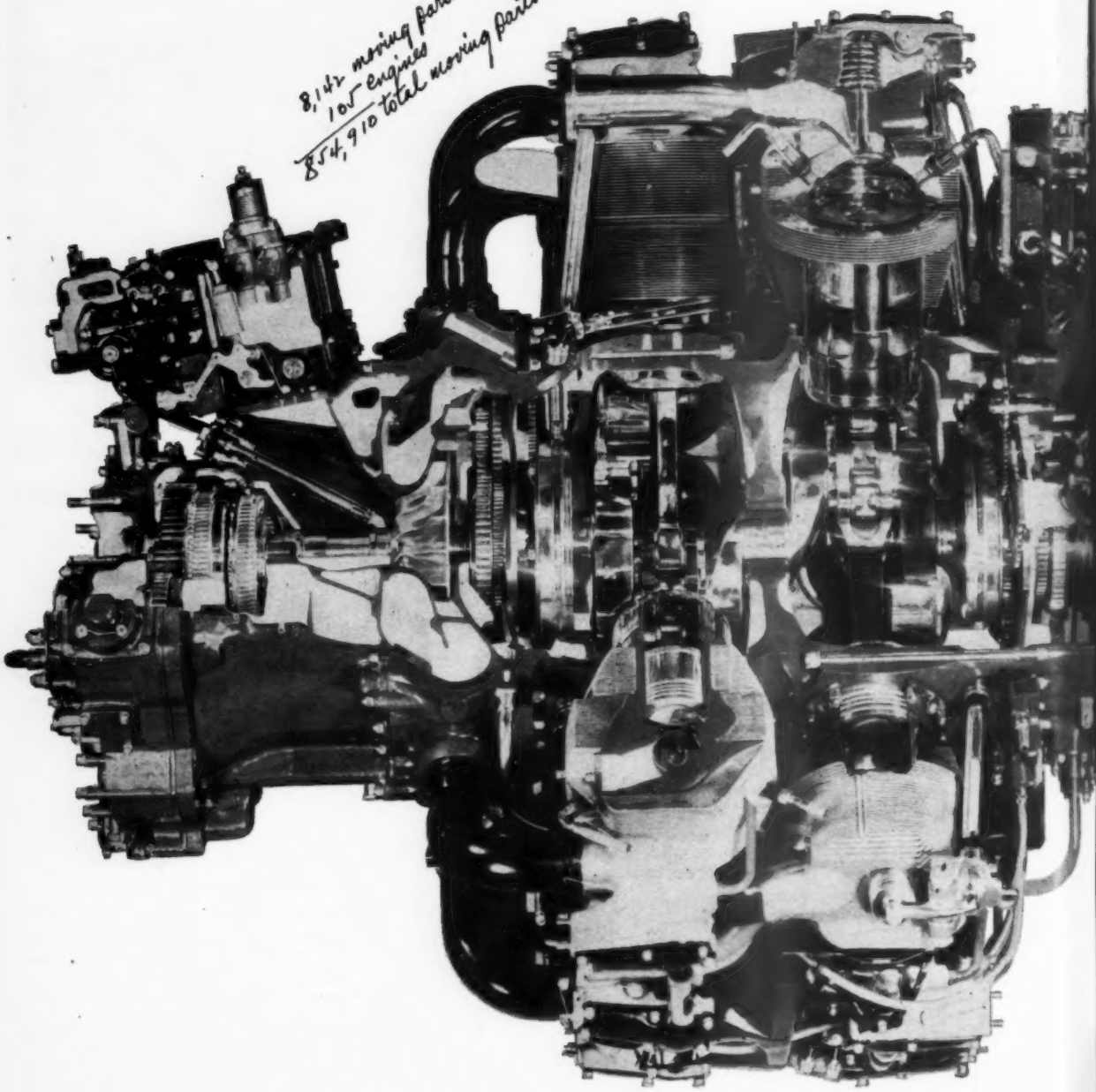
The inner pipe is, in effect, a tube of steel wool running the length of the muffler with perforated outer casing and inside wall. This provides three surfaces of 1200 square inches and nearly 50,000 perforations to absorb noise as it passes through the muffler. Built completely of stainless steel, test mufflers have been operated hundreds of hours without signs of deterioration.

Danger of back-fire has been eliminated by use of a connecting vent which draws in fresh air through a small funnel-shaped scoop forward of the muffler proper.

Piped into the head of the muffler, this fresh air creates a "wall" of air between explosive fumes which could collect in the muffler and any exhaust gases from the engine.

854,910 parts

8,141 moving parts
× 105 engines
854,910 total moving parts



moving every second...

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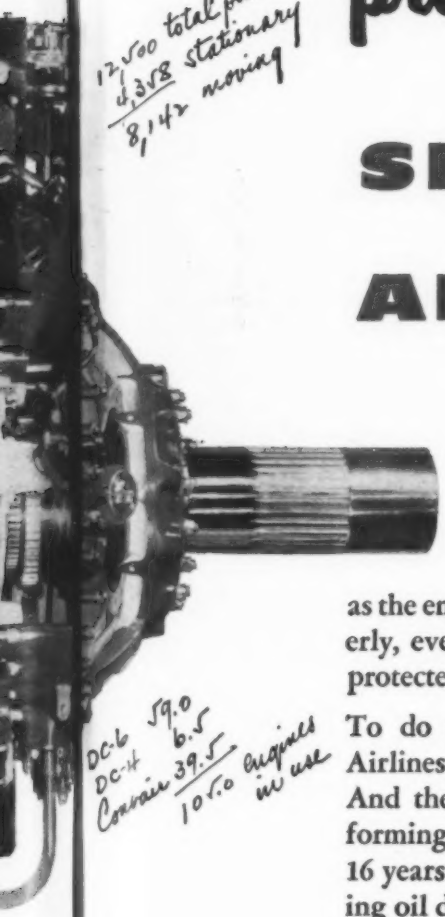
SINCLAIR AIRCRAFT OIL



In each of the huge Pratt & Whitney engines that power the Convairs and DC-6's of American Airlines' Flagship Fleet, there are an estimated 7,642 vital parts that are constantly on the move as the engine roars along. For these engines to operate properly, every one of these moving parts must be completely protected from friction and heat with a dependable oil.

To do this vitally-important lubrication job American Airlines has chosen SINCLAIR AIRCRAFT OIL... exclusively! And the fact that SINCLAIR AIRCRAFT OIL has been performing this job now for American Airlines for over 16 years tells the story of how effectively this fine lubricating oil does its work.

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SINCLAIR REFINING COMPANY, Aviation Sales, 630 Fifth Avenue, New York 20, N. Y.

JOHN S. "ANDY" ANDERSON has been named president of Aeronautical Radio Inc., airline-owned organization. He joined Arinc in 1946, serving as executive vice president and later as president, following resignation of Gordon O'Reilly.

Daily Plane Utilization

Domestic

		May	June
American	2 eng. pass.	6:03	6:24
	4 eng. pass.	8:51	9:29
	cargo	4:02	4:26
Braniff	2 eng. pass.	7:09	7:19
	4 eng. pass.	8:04	8:11
	cargo	8:27	7:37
Capital	2 eng. pass.	7:19	7:35
	4 eng. pass.	8:32	8:22
	cargo	5:51	5:37
Caribbean	2 eng. pass.	3:33	3:56
C & S	2 eng. pass.	8:06	8:52
	4 eng. pass.	7:30	7:41
Colonial	2 eng. pass.	6:55	8:14
	4 eng. pass.	5:46	6:16
Continental	2 eng. pass.	6:19	6:40
Delta	2 eng. pass.	7:04	7:12
	4 eng. pass.	8:02	8:15
	cargo	6:35	6:40
Eastern	2 eng. pass.	9:02	9:16
	4 eng. pass.	9:36	9:43
	cargo	3:07	
Hawaiian	2 eng. pass.	4:13	5:00
	cargo	3:08	3:17
Inland	2 eng. pass.	10:43	10:24
	4 eng. pass.	6:55	6:59
MCA	2 eng. pass.	6:38	6:28
National	2 eng. pass.	7:09	7:15
	4 eng. pass.	9:50	9:32
	cargo	5:32	4:19
Northeast	2 eng. pass.	6:14	7:31
Northwest	2 eng. pass.		7:32
	4 eng. pass.	7:56	8:37
Trans Pac.	2 eng. pass.	3:38	4:03
TWA	2 eng. pass.	5:53	6:02
	4 eng. pass.	7:52	8:11
	cargo	4:27	4:35
United	2 eng. pass.	6:42	4:32*
	4 eng. pass.	8:52	6:01*
	cargo	3:34	3:14*
Western	2 eng. pass.	6:48	7:59
	4 eng. pass.	6:49	6:49

* UAL pilot strike June 19-29.

Technical News Digest

• **Protection for the aluminum alloy** used in the skin of the Boeing B-47 is provided in a plastic lacquer designed for the purpose by the Minnesota Mining and Manufacturing Co. The preparation is applied before and after each manufacturing operation, being peeled off between times like tape. It is applied by a giant atomizer which sprays on .004 of an inch. The lacquer is dried almost instantaneously by infra-red lights mounted on a conveyor. During the forming process the aluminum remains safe from metal chips, scratches caused by sheets of aluminum over one another, heat treatment, deep drawing, anodizing, cleaning and painting and riveting and pneumatic hammer operations.

• **Savings of 75%** in cost and 80-85% in fabrication time of aluminum jettisonable fuel tanks is claimed by Pastushin Aviation Corp. of Los Angeles with the Demarest Process, a process by which tank sections are formed in a single operation in less than 3 minutes rather than by spinning.

• **Capital Airlines** has changed the finishing of the overhead, side wall and wainscoting sections of all 56 of its planes to Dura-Trim, a product of Owens-Corning Fiberglas Corp. Job takes about 200 square yards in a DC-3 and 575 in a Constellation.

• **More than 10,000 hours "flight time"** have now been logged by some 200 flight crews in Pan American Airways' Curtiss-Wright flight simulator since the unit was introduced in November 1948. The flight simulator has permitted savings of 60% in flight training costs by cutting actual flight familiarization time in the Boeing from 10 hours to four hours.

• **Plans are underway** for the testing and possible substitution of boron-treated steels of leaner alloy in place of currently used chrome-nickel-moly grades of richer alloy.

• **Italy's Minister of Defense** has officially thanked CAA and CAB for assistance given five Italian civil aviation experts during their recent five-month visit to the U. S. Included in the Italian team were two electronic engineers, an airport engineer and two aviation safety specialists.

• **An anti-fogging material,** known as RA-12, has been introduced by Regal Air Corp. of New York City. RA-12 is applied with a plunger type atomizer with a single application lasting up to 30 days. It is effective as an anti-fogging and de-fogging agent.

• **Three new air weather groups** have been activated by the U. S. Air Force and Army commands to provide direct meteorological support to three major USAF commands within the U. S. Under the new concept, individual Air Weather Service units will support each of three major USAF commands regardless of the locale of their operations. Involved are the Strategic Air Command, Air Defense Command and Tactical Air Command.

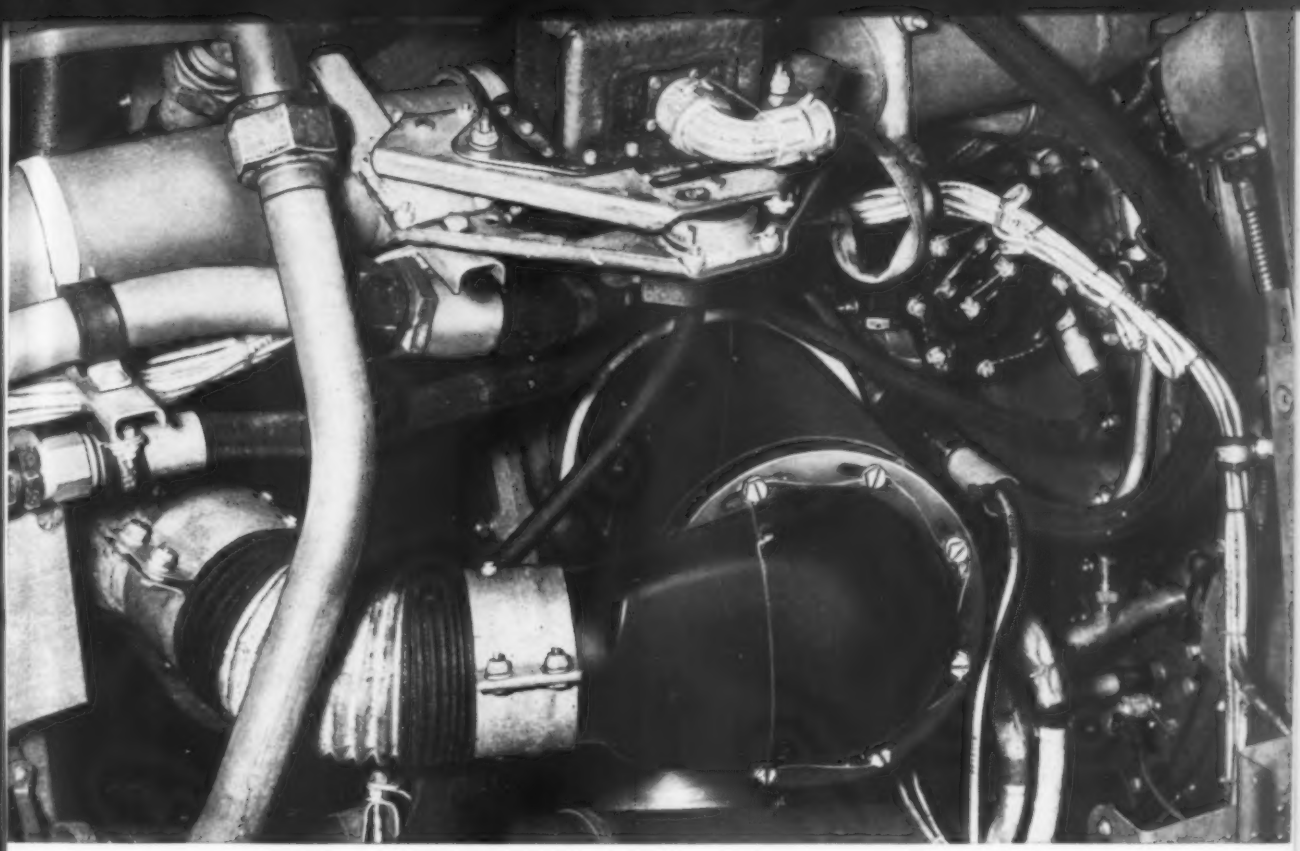
• **Some 8,000 Flying Boom** aerial refueling contacts have been made by the Air Force at various U. S. bases and by Boeing flight test crews, according to Boeing Airplane Company. During these operations more than 750,000 gallons of fuel have been transferred from tankers to fighters.

• **The "Navy Delta,"** a Douglas DC-4 equipped with airborne radar, is being demonstrated to the airlines. The Navy uses a radar operator in addition to the regular crew to handle radar operation and interpretation. The "Delta" uses a nose mounted radar unit.

• **Approved type radio and navigation** equipment will be required of irregular air carriers under the terms of an amendment to CAR part 42 adopted by the CAB last month. Ruling allows through December 1953 for conversion to approved type equipment.

• **NACA's John Tymkewicz** was among the $300 winners in Eutectic Welding Alloy Corp.'s prize competition for papers on "Technological and Research Aspects, Advances and Advantages of the Use of Lower Melting Filler Metals in the Non-Fusion Welding Process."

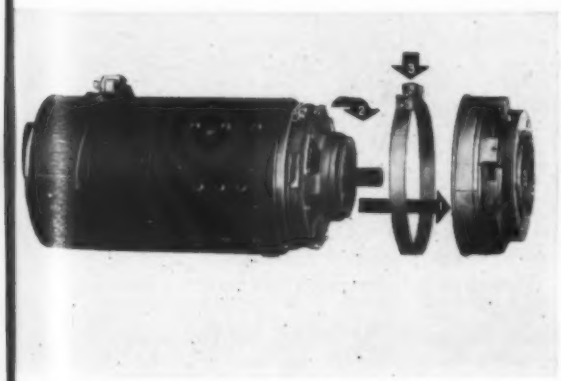
• **A contract** covering study and research on experimental models of directional and omni-directional antennas has been awarded the Research Division of New York University College of Engineering by Canburn, Inc., of Woodside, Long Island. This is actually a sub-contract of a U. S. Air Force award to Canburn.



IN THE NEWS

NEW GENERATOR MOUNT SAVES TIME AND MONEY

This snake pit is a mechanic's nightmare when it comes to removing a generator for routine maintenance. General Electric's new, QAD (quick attach-detach) generator mount eliminates the need for universal joints in mechanics' elbows. Generator replacement time is cut from hours to minutes. The QAD has been selected as an industry standard—for hard-to-get-at installations—by a joint Air Force-Navy committee. It is interchangeable with present generators of equivalent rating.



Simple as one, two, three! 1. Fit generator into slots of mounting ring (permanently mounted on your engine), 2. engage by a slight turn, 3. adjust and tighten clamp ring. The QAD mount can be supplied to fit any G-E aircraft generator. Simple, inexpensive, light weight, the new mounting can be used to mount a generator on piston engines or starter-generator on jet engines.

One man can replace a generator where two were required before, in a fraction of the time. No special tools required . . . no blind fumbling. And, this time and money saving device may be added to your fleet gradually—as ships come in for overhaul. For further information, call your General Electric aviation specialist or write, ***General Electric Company, Schenectady 5, New York.***

Quality equipment for aircraft

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Washington 5, D. C.

Extra Section

By William D. Perreault

How to End Arbitrary Regulations

FOR YEARS the industry has complained that the government, specifically the Civil Aeronautics Board and Civil Aeronautics Administration, is arbitrary in establishing regulations. First business of the second annual review of airworthiness regulations, held in Washington last month, was to establish a set of guiding principles and objectives.

Both CAB and the Aircraft Industries Association had their own ideas on this matter. Word by word, phrase by phrase, the principles were raked over. Finally agreement was reached on a suitable set. Industry representatives urged that CAB and CAA keep the principles well in mind from now on, not drop them after the meeting. The basic principles, said the AIA, should be put on the record and kept in a prominent place. They are reproduced here:

1. **The technical rules** in the regulations should confine themselves to material which has been adequately substantiated as being essential to safety.

2. **The administrative rules** in the regulations for the various categories of aircraft should be minimized in scope commensurate with their importance to general public safety.

3. **Rules should be so drawn** to reflect or permit the recognition of the latest state of the art, and they should not impede new developments, taking into account general aircraft safety provisions. Rules should require only such techniques and equipment as are available and reliable; no foreseeable new hazards should result from compliance with the rules.

4. **Design requirements** which have generally been adopted by the industry as good practice should not for that reason alone be included in the regulations.

5. **If an accident** or other service experience with a certain airplane type suggests a change in the regulations, caution should be exercised before making the new rule applicable to all airplane types.

6. **The rules should be drafted** clearly and with intent entirely apparent.

7. **Rules which would necessitate** supplementary material of a mandatory nature should be avoided. However, if a rule must be stated in general terms so that its application to individual designs would require supplementary material, specific authorization to the Administrator for such treatment should be included in the rule.

8. **Inconsistency of language** between different parts and within individual parts of the regulations should be avoided so as not to infer the existence of unintended substantive differences.

In addition to these CAB-sponsored principles, the AIA suggested, and the meeting adopted as supplementary the following pertinent questions which should be asked prior to adopting new regulations:

1. **Are there means** other than the rule that could be more effective in obtaining this safety objective?

2. **Could other existing** regulations be deleted, relaxed, appropriately modified or be incorporated therein as a logical consequence of the adoption of the proposed regulation?

3. **Having in mind** the full intent of the Civil Aeronautics Act of 1938 as amended, is it advisable to modify or delay action on this proposed regulation in consideration of:

(a) The economics of manufacturing the aircraft, (b) the economics of operating the aircraft, (c) international competition, (d) welfare of the aviation industry as a whole and (e) consistency with existing regulations.

4. **Does the weight,** cost and maintenance of the proposed safety feature detract from the basic mission of the aircraft sufficiently to make this feature of questionable value to the public interest?

A NEW TYPE HEATING UNIT.. .....BY

the makers of

COHRLASTIC

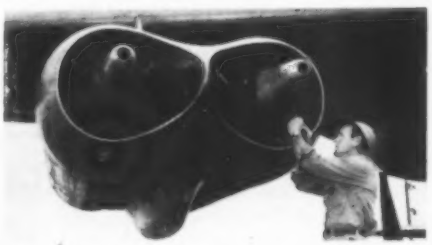
FOR TEMPERATURES FROM −100° TO +500°F.

...proved on B-36 jet pods
...ideal for many other applications

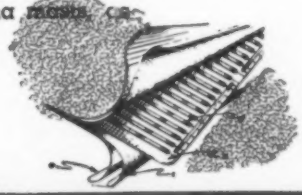
This brand new type of heating element ... developed by the engineering staff of the Connecticut Hard Rubber Company ... offers the design engineer an entirely new material for a host of applications. It consists of resistance ribbon embedded in a specially developed high dielectric strength silicone rubber-coated fiberglas material to form a very thin light weight unit which functions satisfactorily over an extremely wide temperature range.

Flexibility is retained under temperatures below −100°F. and these pads will not crack when flexed moderately. The entire thickness does not exceed .050. Normal heat output at 400°F. is approximately 4 watts per square inch. Higher wattage densities may be used provided the surface temperature of the element is kept below 450°F.

The elements shown here were developed for deicing the air-intake shutoff doors of the jet engines used on the B-36 airplane. In this application the elements are sandwiched between thin aluminum plates to form a part of the door assembly. Other aircraft uses include the deicing of air-intake throats, helicopter blades and antenna masts, as well as heating of oil vent lines. The ability to make these pads in a wide variety of shapes to meet specific design requirements greatly extends their field of application and utility.



The ice removing power of Cohrlastic elements as used on the air-intake doors permits positive retraction and extension of the doors. This assures engine starting and helps eliminate drag when engines are not operating. The pads are molded to shape and provide ample amounts of heat for deicing under most extreme conditions.

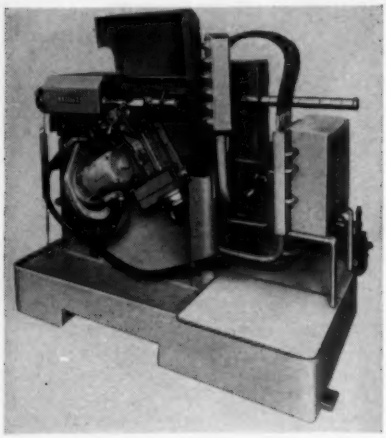


SEE SKETCH AT LEFT

(a) Resistance wires wound around a dielectric form.
(b) Rigid dielectric form of Cohrlastic silicone-resin-fiberglas laminate, covered by an intermediate layer of silicone rubber fiberglas insulation.
(c) (d) Complete assembly with additional protective layer of Cohrlastic silicone rubber fiberglas insulation.

THE *Connecticut* HARD RUBBER COMPANY, 411 EAST STREET, NEW HAVEN, CONN.

New Products



Compressor Blade Grinder

A standard machine for grinding the airfoil form on jet aircraft compressor blades is now available from Ex-Cell-O Corporation. Feature of the new device is a machining cycle which is completely automatic except for loading the work, pressing the starting button, and unloading the work at the end of the cycle. The coolant equipment used in the grinding process is also automatically controlled.

The machine, called Style 87 Precision Profile Grinder, uses master cams made from the engineer's glass layouts to assure accuracy of airfoil form.

Because area of contact between the work and the grinding wheel is very small at the leading and trailing edges and quite large at the broad sides of the blades, the work speed changes as the blade rotates. A two-speed, work drive motor slows down and speeds up the grinding wheel at appropriate times in the process. There are two periods during which the fast speed is used and two periods of slow speed in each revolution, assuring uniform finish.

Address: **Ex-Cell-O Corporation,** Detroit 32, Mich.

Check Valve

A plunger type check valve for use in water injection systems has been placed in production by Allen Aircraft Products. Made of aluminum with interior treated for corrosion resistance, the Allen valve weighs less than three ounces. Normally supplied as a spring loaded valve in the open position, the unit closes at three pounds per square inch reverse pressure. Can also be provided spring loaded in the closed position. Designed for a proof pressure of 1,000 pounds per square inch while working pressure is 500 p.s.i. Pressure loss is less than .75 p.s.i. at 60 gallons per hour. Operating temperature range from minus 65 degrees F. to plus 250 degrees.

Address: **Allen Aircraft Products, Inc.,** Ravenna, Ohio.

Bidirectional Airport Light

A new, bidirectional, high-intensity airport light for use on runways when instrument landing procedures are in use has been announced by the Westinghouse Electric Corporation. Designed to meet the requirements of CAA Specification L-819, the new light directs two main beams of light up and down the runway, while at the same time the one-piece, 360-degree glass lens provides off-runway light which helps guide circling airplanes.

The light is available with clear, clear-yellow, or green lenses for runway and threshold markings. It uses a 200-watt, 6.6-ampere, T-14 bulb prefocus base aviation lamp. Color filters are located inside the lens to eliminate breakage by contact with rain, sleet, or snow.

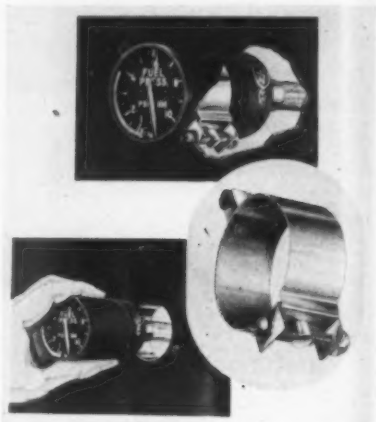
Four screws make possible adjustment of the optical system up to five degrees from the vertical in any direction. Stainless steel spring clips, bearing upon the lens flange with equal pressure, secure the lens to the lens ring in a gasketed seal. Relamping is accomplished through the loosening of a single thumb screw.

Address: **Westinghouse Electric Corporation,** Box 2099, Pittsburgh 30, Pa.

Wire Marker

A new typewriter-like machine for use in marking identification on electrical wiring and on Vinylite tubing used over electrical wires has been introduced by Ralph C. Coxhead Corp. The wire or tubing is simply clamped in position and the identification "typed" on. Actually the identification is branded into the surface so that the resulting mark is indelible and permanent. A special heating device maintains the correct temperature to impress the carbon marking into the surface. Unit features changeable type so that tubing from ⅛-inch to ½-inch diameter can be branded with maximum size type. Available in special symbols and foreign languages as well as standard keyboard.

Address: **Ralph C. Coxhead Corp.,** 720 Frelinghuysen Ave., Newark, N. J.



Instrument Clamp

A new instrument mounting clamp which allows removal of the instrument from the dial side of the panel has been announced by Marman Products. Installed from the rear of the panel, behind the cutout, the clamp can be adjusted by means of a single adjusting screw (see photo) which extends through the panel. Marman clamp number 23906 is a standard AN-5808-1 unit conforming to Mil-C-6822.

Address: **Marman Products Co., Inc.,** 940 W. Florence Ave., Inglewood, Calif.

Humigraph

A simple indicator card capable of showing the degree of humidity ranging from 10 to 70% by easily checked visual means has been introduced by Andrew Technical Service. Consisting of a card measuring 6¾ inches by 1⅞ inches, the Humigraph has a vertical column of seven color spots each representative of a particular humidity level. Suitable for use at temperatures ranging from 50 degrees to 200 degrees Fahrenheit, the Humigraph is dependable for many months. Card responds in about 10 minutes to small changes in humidity. Changes in humidity cause the spots to turn color and reading is taken at top blue spot. Costs only a few cents per unit.

Address: **Andrew Technical Service,** 3805 N. Clark Street, Chicago 13, Ill.

What's doing at JACK & HEINTZ

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An open mind and complete freedom to select components, including those made by other specialists, feature the Jack & Heintz approach to complex problems in the field of electrical control systems.

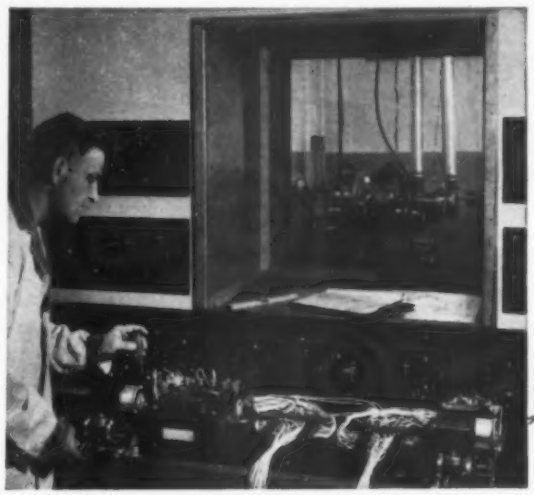
Over the years, J&H has designed many special systems taking into account the characteristics of specific installations. This broad experience gives J&H engineers a practical approach to so-called "standard" systems with wide application.

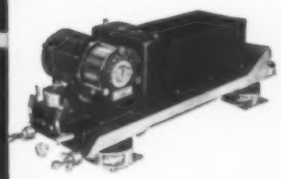
Lightness, compactness and ease of maintenance have been combined with dependability in J&H Electrical Control Systems developed in co-operation with the government, airframe manufacturers and airlines.

J&H Systems include co-ordinated controls and protective devices mounted centrally in a vibration-proof assembly with simplified, plug-in connections.

Components feature; stable, long-life voltage regulators incorporating a new-type, frictionless spring to match the magnetic force curve; simplified, trip-free resetting; accurate paralleling; and a contactor of high interrupting capacity. Accurate reactive load division, constant or variable frequency controls and speed governing are offered with a-c models.

Since protective devices may actually increase the hazards of aircraft operation in many cases, the addition of such devices must be carefully considered. Our Systems Test Laboratory, accordingly, evaluates the effect of additional protective devices on the complete system by seeking failures, to prevent them later, in actual service.





In this Jack & Heintz "test house", electrical control systems are being tested under conditions that simulate installation, even to wiring and loads. BELOW: Typical J&H Electrical Control System Panel. Two shunts and a contactor complete the system.

Chief Engineer's Corner

Our company designs equipment to fulfill our customers' needs, rather than equipment that can be "sold" to them. With this policy, our electrical control systems all have been designed by first consulting with the customer to learn his requirements, then initiating the design, and maintaining very close liaison between the customer's engineers and our own during the design, prototype and testing stages.

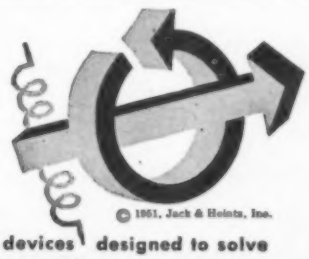
Our engineers are obligated to choose the best relays and other components available, and to combine them into the simplest, most rugged and most reliable system possible. That is why J&H Systems often have fewer relays and less complicated circuits.

We recognize that the airframe or airline engineers have a much more intimate knowledge of their specific application than our engineers possibly could have. That is why we feel that any aircraft electrical system design must be the result of our working with the customer's engineers.

Customers are invited to be present during shakedown runs on their systems, and to help us try to make the systems fail, to insure their future dependability.

For data on J&H Systems, address Jack & Heintz, Inc., Cleveland 1, O.

JACK & HEINTZ *Rotomotive* EQUIPMENT



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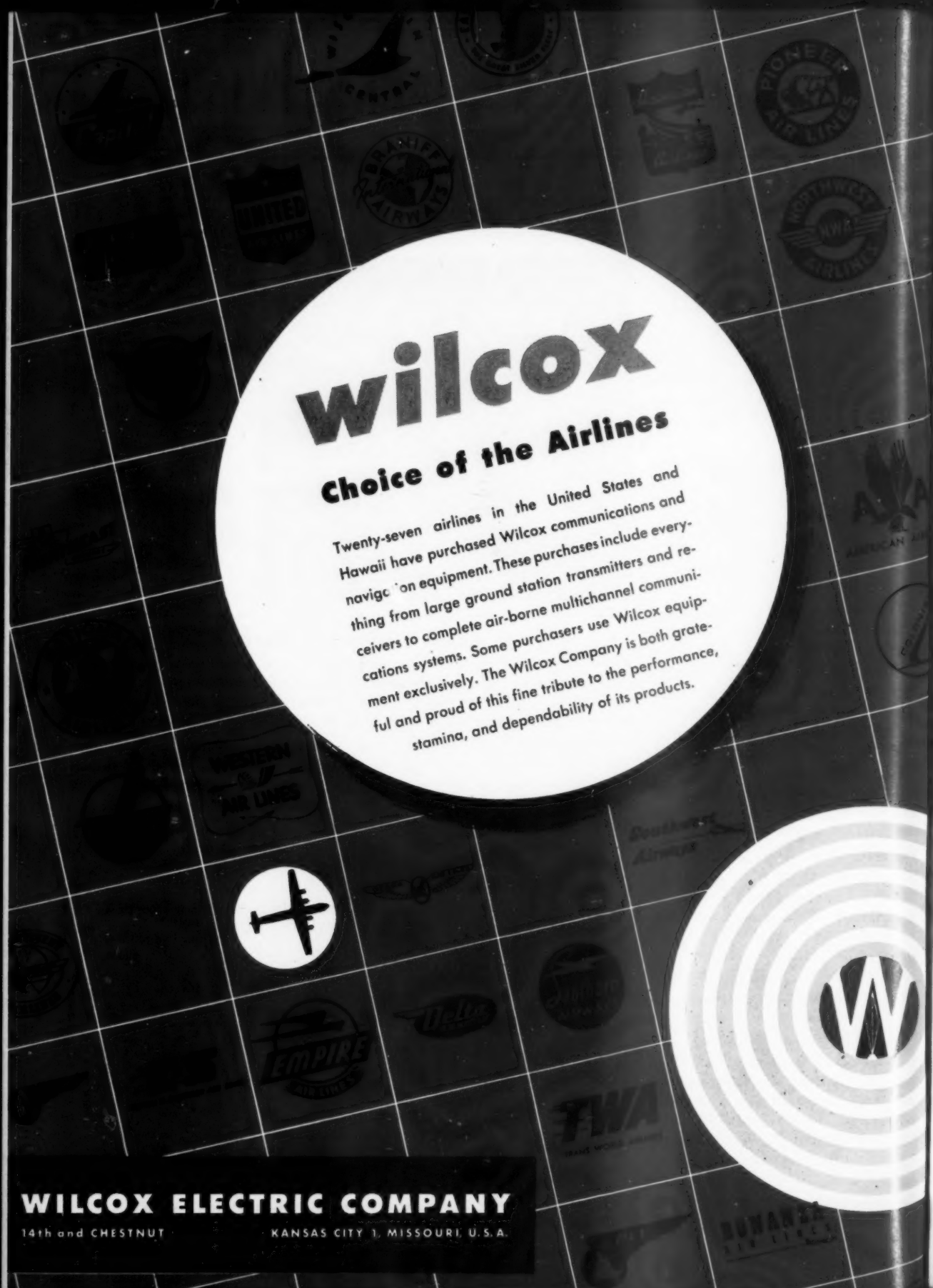
means electrical, hydraulic or mechanical devices designed to solve unusual problems of developing power, controlling it, or using it.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Twenty-seven airlines in the United States and Hawaii have purchased Wilcox communications and navigation equipment. These purchases include everything from large ground station transmitters and receivers to complete air-borne multichannel communications systems. Some purchasers use Wilcox equipment exclusively. The Wilcox Company is both grateful and proud of this fine tribute to the performance, stamina, and dependability of its products.
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What Do Rail Passenger Losses Mean?

Need seen for better air, train and bus policy to serve public more economically.

By Gotch & Crawford
Planning Consultants

HEAVY losses being experienced by the railroads in passenger train service constitute an unsound and serious situation which carries far-reaching implications for the public, freight shippers, and investors, and for rail, bus and air lines.

While the domestic airline industry and the intercity motor carriers of passengers are prospering, net railway operating deficit from passenger train services has exceeded one-half billion dollars for the third straight year.

During 1950, trunk and local service domestic air carriers showed a net operating income of $63 millions and net income of $30 millions; corresponding figures for intercity motor carriers of passengers were $35 millions and $18 millions respectively.

True, the railroads have earned substantial net income during recent years on their total operations, but these profits are derived exclusively from freight services. The users of rail freight service are not only covering the costs of rail freight plus profit, but also are bearing the burden imposed by passenger service deficits. Approximately one-third of the reported net railway operating income from freight services has been applied in recent years to offset the passenger service deficit. (Table I).

Passenger train services are thus being subsidized in amounts undreamed of in air transport circles. The higher losses become on passenger train services, the higher freight rates are pushed. Clear evidence of this is seen in the ratio of operating expenses to revenues.

- In **1945, 80% of freight revenues** were used to cover freight operating expenses and 20% of freight revenues went to fixed charges and profit.
- In **1950, only 66% of increased** freight revenues were used for freight expenses and the balance covered fixed charges, passenger service deficits, and profits.

	Operating Ratios Passenger	Freight
1945	77%	80%
1946	100	79
1947	117	71
1948	127	69
1949	137	70
1950	124	66

The source of air transport subsidy is taxes paid by the general public on an ability-to-pay basis and channeled through the public treasury. Rail passenger service subsidy is collected in the form of higher freight rates which are paid by those who are obliged to use rail freight. One is as much a charge against the wealth of this country as the other. Taxes at least have the virtue of being anti-inflationary, while increased freight rates certainly add to inflation.

With respect to the figures in Table I, it should be clearly understood that while these net amounts fully reflect taxes, including income taxes, they are before adjustments which in recent years have added roughly $200 millions as "Other Income" and have deducted approximately $420 millions for "Fixed Charges" to arrive at net income for the entire operation.

Revenues entering into the passenger train net in Table I are roughly 70% passenger revenues, 20% mail revenues and 10% divided among other forms of "head end" traffic such as baggage, express, milk, etc. Net railway operating income from passenger train service is accordingly a composite result of these services and not strictly the result of passenger operations alone.

There is little prospect that the pub-

Table I

Net Operating Income Class I Railroads

	Passenger and Allied Services	Freight Service	Passenger and Freight Combined
1939	$(250,934)	$ 837,886	$ 586,952
1940	(262,058)	942,518	680,460
1941	(226,059)	1,223,053	996,994
1942	89,329	1,394,383	1,483,712
1943	279,790	1,080,023	1,359,813
1944	234,103	871,263	1,105,366
1945	230,060	620,648	850,708
1946	(139,736)	759,738	620,002
1947	(426,526)	1,206,427	779,901
1948	(559,782)	1,561,020	1,001,238
1949	(649,627)	1,335,484	685,857
1950	(508,508)	1,547,725	1,039,217

NOTE: Figures represent operating revenues remaining after deducting operating expenses, railway tax accruals and equipment and joint facility rents, and before adjusting for other income and fixed charges.

Table II

Inter-City Passenger Miles

	Class I Railroads (Other than Commutation) Total	Parlor and Sleeping Cars	Domestic Airlines (Trunk and Local Service)
		(In billions)	
1939	18.6	7.5	0.7
1940	19.8	7.3	1.0
1941	25.3	9.2	1.4
1942	48.9	17.9	1.4
1943	82.6	24.7	1.6
1944	90.2	26.9	2.2
1945	86.3	26.9	3.3
1946	58.8	19.8	5.9
1947	39.9	12.3	6.1
1948	35.3	11.0	5.9
1949	29.6	9.3	6.7
1950	26.8	9.3	8.0

Table III

Passenger Revenues

	Class I Railroads (Other than Commutation)		Pullman Company	Class I Motor Carriers (Intercity Schedules)	Domestic Airlines (Trunk and Local Service
	Total	Parlor and Sleeping Car			
		(000,000 omitted)			
1939	$376	$175	$55	$115	$34
1940	376	168	53	117	53
1941	473	209	61	154	69
1942	976	429	104	275	74
1943	1596	590	142	372	86
1944	1733	656	158	390	115
1945	1658	644	153	390	164
1946	1196	485	126	381	273
1947	896	336	106	355	305
1948	888	332	109	375	339
1949	782	294	97	347	385
1950	734*	302*	97	318	440

*Constructed.

Table IV

Yields per Revenue Passenger Mile

	Class I Railroads (Other than Commutation)		Pullman Company	Domestic Airlines (Trunk and Local Service)
	Total	Parlor and Sleeping Cars		
1939	2.02c	2.33c	0.65c	5.07c
1940	1.90	2.30	0.64	5.05
1941	1.87	2.28	0.64	5.02
1942	2.00	2.40	0.55	5.24
1943	1.93	2.39	0.55	5.32
1944	1.87	2.43	0.56	5.32
1945	1.92	2.39	0.56	4.93
1946	2.03	2.45	0.61	4.62
1947	2.24	2.74	0.79	5.04
1948	2.51	3.01	0.90	5.74
1949	2.64	3.14	0.92	5.76
1950	2.74	3.25	0.92	5.54

lic will patronize existing rail passenger services at existing prices on an economic basis. Rail passenger revenues, which stood at $813 millions in 1950, would have had to be $1,321 millions in order to break even on passenger train services.

Rail Declines

This railway dilemma grows grimmer with a look at traffic trends. Total intercity travel by common carrier has trended downward since 1946, doubtless due to inereased use of private automobiles. During the same period, air travel has trended upward (Table II) while rail travel has declined.

Looking at passenger revenue trends, it is noteworthy that 1950 air revenues of $440 millions exceeded for the first time both intercity motorbus passenger revenues of $318 millions, and first class rail plus pullman revenues of $399 millions (Table III).

In the face of these developing trends, the railroads adopted a pricing policy which has increased their yields per revenue passenger mile by approximately 35% since 1946, and their yield per freight ton mile by 37%. During the same period, the price of air travel, as reflected by yield, increased only 20% (Table IV).

This diminishing gap between the price of air and rail travel together with increasing public preference for air travel is in a large measure responsible for the relative travel trends set forth in Tables II and III.

Standing alone, the net railway operating income from freight services would not support the series of general freight rate increases which have been made. From 1946 to 1949 the yield per ton-mile increased 37% and further increases were recently announced. These increases have been forced in large part by the passenger service deficits and have had serious and far reaching economic effects, particularly on volume-moving commodities.

General increases in freight rates rock the economic boat from one end to the other. Increased freight rates are generally passed on to the consumer in the form of higher prices and affect the competitive position of industries both great and small.

For example, if oil moving by pipeline experiences no added charge for transportation, and coal moving by rail must bear increasing freight charges, the competitive relation between the two changes, affecting two basic industries, associated small businesses such as dealers and distributors, and John Q. Public who may have to junk a satisfactory coal furnace and convert to oil.

In connection with these problems, the Interstate Commerce Commission has said, "We have felt compelled in a general rate case to take the passenger deficit into account in adjustments of freight rates and charges. Both the freight and passenger service are essential, and revenue losses or deficits on the one necessarily must be compensated by earnings on the other."

Better Solution

Whether this public policy as expressed by the ICC is one that can endure is of prime importance. Obviously the ICC is following the expedient course in settling difficulties which came within its jurisdiction. Some better and abiding solution to the over-all problem may be found.

Conceivably, an increased shift of passenger travel from rail to air on longer haul traffic and to motorbus on shorter haul traffic might benefit all three media. Rail carriers might thereby eliminate the out-of-pocket expenses accompanying the passenger services abandoned. Air carriers might improve progress toward complete self sufficiency. And motor carriers might profitably operate short haul service which has caused heavy loss to rails.

Such sweeping questions are beyond the scope of this article and could be answered only after considerable study by the transport industries and the regulatory agencies concerned. Our object is simply to point out a vast problem and suggest that a more economical solution may be found. The most economical solution will be reached when the users of each form of transportation pay the full cost of the service they use.

Passenger train service is provided in its present-day scope, not by virtue of

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its ability to compete effectively and economically with other agencies of transportation, but by virtue of its historic domination of the market. No other agency can take rail's place in a short period of time. Great volumes of rail passenger service must continue to be offered.

But public policy formulators must face this question—Can a better pattern of passenger service be evolved so that air, rail and bus serve the public need on a more economical basis?

So far as the air transport industry is concerned, evolution is on the side of the airlines.

The air transport industry is in an era rich in technological innovations which have improved dependability and have made possible expanding volumes of service at decreasing unit costs. This places the airlines in a favorable position to penetrate more and more the long-haul travel market. With the imminent entry of the helicopter into passenger service, the short-haul market is also opened to penetration by air.

The manner in which this evolution takes place and the rate at which it takes place are dependent upon the formation of a sound over all transport policy which is lacking, despite great need.

PORTABLE TICKET COUNTER developed by Eastern Air Lines is used at conventions and other group meetings in the Miami (Fla.) area. Equipped with supplies and facilities, including a telephone, for making reservations and selling tickets, the counter weighs 350 pounds and can be dismantled for moving.

Airline Commentary

By Eric Bramley

THE RED TAPE which surrounds operation of U. S. international airlines—forms for customs, immigration, health, etc.—has been a much discussed subject. But **Ralph Damon,** TWA president, recently put it in easy-to-understand form, and his comparisons show how serious, and ridiculous, red tape has become.

He pointed out that TWA has a special New York planning department to coordinate all the forms prior to departure. They start work the night before flight time and step up their activity in the last couple of hours before departure. "In the entire period when our people first start to fill out a flight's forms and the plane eventually gets into the air, another airliner has ample time to fly from Los Angeles to New York," he said.

He also had an interesting comparison on currency. Some nations, he said, allow unlimited importation of their currency, others allow a limited quantity, others prohibit any. Leaving these countries to go elsewhere, rules may be entirely different and in reverse order.

"This may sound somewhat ridiculous," he added, "but let's take a look at ourselves. Twenty-five years ago, if a man had walked down the street in Los Angeles displaying $100 in gold coins in one hand and a bottle of whiskey in the other, he would have been arrested—for carrying the whiskey. Today if he does the same thing, he is also arrested—but now for carrying the gold pieces! This same type of artificial regulation in every country is the red tape to which I refer."

•

As airplanes get bigger, you never know what problems you'll have. For example, Pan American World Airways tells us that its Stratocruiser passengers are doing more walking. Seems that people are taking tours up and down the aisles and up and down the stairs. Result: Clipper carpets are showing signs of wear after 60 days and need to be replaced. So PAA's switching to Goodrich's Vinyl carpeting, which it says will last three times as long as ordinary carpeting.

•

We quote the following rib-tickling "success story" from British European Airways' magazine:

"From the first days of civil aviation . . . we have, apart from offering to the public the obvious advantage and attraction of greater speed, sought to emulate the stronger points of other forms of transport. We have tempted the wavering passenger with luxury, as of an ocean liner; we have striven to offer the wary one the regularity of the train; we have wooed the less wealthy with the cheapness of the coach.

"But now sound the trumpets! Beat the drums! Clash the cymbals! (And shouldn't we do something with the shawms at this stage?) It is the dawn of a new era.

"The French Railways, advertising their latest luxury trains, have recently made a strong point of their adjustable aircraft-type seats. Success! We are being copied. We have arrived—*nous sommes arrives. Vive la chaise, type avion, des Chemins de Fer Francais!*"

(We looked up shawm for you. It's an obsolete wind instrument of the oboe class).

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Braniff Airways' houseorgan, B-Liner, carries a column "Yesterday's Headlines," including items of a year ago, five, 15 and 20 years. We were amused by a paragraph in the 20-year-ago category, taken from Capt. Shrader's log book (Ray Shrader, now Braniff vice president). "Had coffee with Jack Frye, TWA operations head, at lunch counter, Kansas City. Learned that TWA has 275 employes in operations . . . wonder if we will ever grow to be as big an outfit as that?"

Airline People

ADMINISTRATIVE

Joseph V. Shields elected a director of Colonial Airlines. He is a partner of

Shields

Bowles

Richard J. Buck & Co., New York investment house.

William E. Boeing, Jr., has been elected as a director of Pacific Northern Airlines, filling a vacancy created by the death of the late **Austin E. Lathrop.**

Leendert C. Zonruiter, formerly with KLM Royal Dutch Airlines, is now administrative manager of Air France's North American and Caribbean Division.

W. Gordon Wood named v.p.-traffic of Trans-Canada Airlines succeeding **Anson C. McKim,** resigned. TCA's general traffic manager since 1948, Wood has been with the airline's traffic department since 1939.

TRAFFIC & SALES

Whitney Bowles, formerly int'l sales rep. for Slick, joined Scandinavian Airlines as supervisor of commercial sales in North America.

Henri Clemens, formerly KLM's southeastern U. S. regional representative, transferred to Rio de Janeiro as general mgr. there. **Henry van Lunenburg** replaces Clemens. He was formerly commercial mgr. in Montreal. **Rudolph Bulterman** has been appointed regional representative for the New England States. **J. M. Witzen-Geysbeek** is now sales mgr. for KLM in Montreal.

L. Guy Carter, Jr., Braniff Airways' manager of reservations procedures, has been named temporary sales mgr. at Miami.

John L. Copeland, formerly Chicago and Southern's special representative in Caracas, appointed d. s. m. in St. Louis.

Paul T. Rennell named Pan American Atlantic Division sales manager following **Dhan Mukerji's** promotion to Div. Traf. & Sales Mgr.

Walton H. Jones is now reservations and ticket office superintendent for the Atlantic Division of Pan American. Formerly ass't to the traffic and sales mgr., he replaced **Everett Mitchell,** resigned.

OPERATIONS-MAINTENANCE

Braniff Station Manager **Kenneth (Bill) Loeffler** transferred from Austin, Tex., to Miami. **Carl Boyles** succeeds him as station manager at Austin.

Capt. George Cauthen appointed chief pilot-int'l in charge of Avianca's overseas operations.

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Post Office Lists International Mail Pay

U. S. international airlines in the fiscal year 1950 received revenues of $10,873,846 from the carriage of foreign countries' air mail, while foreign carriers received $2,151,289 for hauling U. S. mail, according to the Post Office Dept.

It was also shown that U. S. international airlines carried 19,244,240 ton-miles of U. S. mail in fiscal 1950, for which they were paid $55,670,085, or an average of $2.8928 per ton-mile. There was a wide variation between the ton-mile payments to individual carriers.

These statistics, shown in the tables below, were furnished by the PO to the subcommittee of the Senate Appropriations Committee handling the Treasury and Post Office appropriation for fiscal 1952. They were requested by Sen. Harley M. Kilgore (D., W. Va.).

TWA Leads

In the carriage of foreign countries' mail (for example, mail from France to the U. S.), U. S. lines performed 4,827,468 ton-miles with average revenue per ton-mile of $2.2525. TWA was the top carrier, receiving $3,090,478 for 1,454,273 ton-miles, an average of $2.1251 per ton-mile. The airlines' average revenue in this field varies according to whether they carry regular letter mail at $2.86 a ton-mile or other articles and parcels at 71.5c.

Scandinavian Airlines System led the foreign carriers in hauling U. S. mail from this country abroad. It was paid $611,048 for 259,288 ton-miles, an average of $2.356. All foreign lines averaged $2.5398.

Highest average ton-mile payment to a U. S. line for carrying U. S. mail went to Braniff Airways, which received $62.94 on its Latin American route. It transported 27,558 ton-miles at cost to the PO of $1,734,503. Chicago and Southern carried 26,606 ton-miles at cost of $1,512,892, for an average of $56.86. Lowest ton-mile payments went to Eastern Air Lines (70c) for U. S.-Puerto Rico, American Airlines (73c) for U. S.-Mexico City, and Pan American World Airways ($2.0376) for U. S.-Orient.

U. S. Mail by Foreign Carriers

Carrier and route	Amount paid carrier	Ton-miles	Average revenue per ton-mile
Air France: TA	$452,558	171,205	$2.643
British Overseas Airways (BOAC): TA	571,397	212,461	2.689
Royal Dutch Airlines (KLM): TA	199,665	76,255	2.618
Belgian Air Lines (SABENA): TA	110,528	41,898	2.638
Scandinavian Airlines: TA	611,048	259,288	2.356
Swissair: TA	67,009	29,977	2.235
British Commonwealth Pacific (BCPA): TP	113,308	39,386	2.876
Air France	1,145	468	2.446
British South American (BSAA): LA	2,828	886	3.191
Caribbean International (CIA). LA	299	121	2.471
Cia Cubana de Aviacion (CUBANA): LA	1,778	633	2.808
Linea Aeropostal Venezolana (LAV): LA	19,726	14,464	1.364
Total	$2,151,289	$847,042	$2.5398

TA—Trans-Atlantic; TP—Trans-Pacific; LA—Latin America.

U. S. Mail by U. S. Airlines

Carrier and route	Amount paid Carrier	Rate fixed by CAB	United States ton-miles	Average revenue per ton-mile
American: U. S.-Mexico	$ 89,792	75 cents ton-mile for daily average of 2,500 ton-miles, sliding scale	122,027	$ 0.7358
American Overseas: U. S.-Europe	4,164,964	1.657 cents by lower of 20,675,000 or seat-miles each month	1,588,091	2.6226
Braniff: U. S.-Latin America	1,734,503	95 cents per plane-mile. Daily base of 4,996 miles	27,558	62.9401
Chicago & Southern: U. S.-Latin America	1,512,892	$1.25 per plane-mile. Daily base of 3,367 miles	26,606	56.8628
Colonial: U. S.-Bermuda	233,983	31 cents per plane-mile. Daily base 2,141 miles	7,388	31.6708
Eastern: U. S.-Puerto Rico	52,545	75 cents ton-mile daily average, 2,500 ton-miles sliding scale	74,880	.7017
National: U. S.-Cuba	57,440	18 cents plane-mile on sliding scale	13,492	4.2574
Northwest: U. S.-Alaska-Orient-Hawaii	5,577,827	$1 per plane-mile. Daily base of 16,000 miles	2,009,030	2.7764
Panagra: Canal Zone to Latin America	3,136,489	50 cents by lower of 434,000 or plane-miles each month	342,167	9.1665
Pan American: U. S.-Alaska	1,327,603	59 cents plane-mile. 6,573 miles daily base	431,389	3.0775
Pan American: U. S.-Europe-Africa-Near East	9,677,612	2.363 cents by lower of 34,240,000 or seat-miles each month	3,037,774	3.1858
Pan American: U. S.-Latin America	7,222,793	33 cents by lower of 1,825,000 or plane-miles each month	2,798,219	2.5812
Pan American: U. S.-Orient	11,714,116	2.58 cents by lower of 38,000,000 or seat-miles each month	5,749,084	2.0376
Trans-World: U. S.-Europe-Near East	9,167,526	85 cents plane-mile. Daily base of 30,000 miles	3,016,535	3.0391
Total	$55,670,085		19,244,240	$ 2.8928

Foreign Mail by U. S. Lines

Amount paid carrier	Ton-miles	Average revenue per ton-mile
$ 73,836	41,260	$1.7895
1,202,260	564,293	2.1306
30,904	10,778	2.8673
12,149	6,103	1.9907
5,146	2,264	2.2730
.....	.....	.....
.....	.....	.....
409,169	243,923	1.6775
706,753	245,705	2.8764
.....	.....	.....
2,167,475	972,575	2.2286
1,959,897	714,305	2.7438
1,215,779	571,989	2.1255
3,090,478	1,454,273	2.1251
$10,873,846	4,827,468	$2.2525

Note: Average revenue per ton-mile of foreign mail by U. S. lines varies according to the relative volume carried of letter mails at $2.86 per ton-mile (service within Europe $1.43 per ton-mile) and other articles and parcels at 71½ cents per ton-mile.

PAUL E. BEWSHEA, now sales manager in charge of the North American area of British Overseas Airways Corporation, this month completes 22 years of representation of British transportation in the U. S. He came to the U. S. as resident representative of Imperial Airways in 1929, eight years before the first British air service to the U. S. was opened.

CAB Calendar

Sept. 18—(Docket 4717) Prehearing conference in Delta/Northeast Merger Case. 10 a.m., Room 5842, Commerce Bldg., Washington Examiner Edward T. Stodola.

Sept. 19—(Docket 3915) Hearing in Regina Cargo Airlines Individual Exemption Case. Tentative. Examiner Curtis C. Henderson.

Sept. 20—(Docket 3661) Oral argument before the Board in Twin Cities/Detroit-Washington Through Service Investigation. 10 a.m., Room 5042, Commerce Bldg., Washington.

Sept. 24—(Docket 4387 et al.) Oral argument before the Board in Wisconsin Central Airlines Certificate Renewal case. 10 a.m., Room 5042, Commerce Bldg., Washington.

Sept. 25—(Docket 1102 et al.) Oral argument before the Board in Re-opened Southern Service to West Case. 10 a.m., Room 5042, Commerce Bldg., Washington. Postponed from September 17.

Oct. 1—(Docket 3901) Hearing in Caribbean American Lines Individual Exemption Case. Tentative. Examiner J. Earl Cox.

Oct. 1—(Docket 4882 et al.) Hearing in the New York-Balboa Through Service Proceeding. Tentative.

Oct. 9—(Docket 3949) Hearing in Argonaut Airways Individual Exemption Case. Tentative. Examiner Richard A. Walsh.

Oct. 15.—(Docket 4985) Hearing in El Al Israel Airlines Limited Foreign Permit Amendment Case. 10 a.m., Room E-214, Temp. Bldg. 5, Washington. Examiner Barron Fredricks.

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New Services

Northwest Airlines has reactivated Portland-Honolulu service with a weekly Stratocruiser flight. Service had been interrupted since June pending completion of additional runways at Portland-Columbia airport to accommodate the Boeings.

Western Air Lines' traffic bounced back fast after its mechanics' strike. Peak volumes returned as fast as trips were restored . . .

United Air Lines will include Oakland, Calif., as a stop on its trans-continental coach flights which start Sept. 30. The Oakland Board of Port Commissioners had previously protested that both TWA and UAL had omitted Oakland from coach flights and had claimed that the city had shown itself to be an outstanding air coach community . . .

Central Airlines has been granted authority to provide daily service to Norman, Okla., on an exemption order issued by the CAB. Four flights daily will operate into Norman . . . **Pacific Northern Airlines** will start service Oct. 1 over its recently awarded Alaska-Seattle/Portland route. Service will be operated between Anchorage and Seattle/Portland via Juneau, Yakutat and Cordova . . .

British Overseas Airways Corporation has asked CAB for amendment of its Atlantic foreign air carrier permit to include Jamaica, B.W.I., as a coterminal point with Bahamas Islands. Company would serve Jamaica direct or via Nassau with four round-trips weekly from London via New York . . .

All American Airways on Sept. 15 discontinued seasonal service at Cape May, N. J., and Georgetown/Rehoboth, Del. Other seasonal services scheduled to be discontinued: **Western Air Lines,** at Jackson, Wyo., on Sept. 30; **Northeast Airlines,** at Laconia, N. H., Berlin, N. H., and Bar Harbour, Me., on Sept. 30; **Piedmont Airlines,** at Morehead City, N. C., and Southern Pines/Pinehurst, N. C., in October . . .

National Air Taxi Conference, which is operating taxi service in connection with the scheduled domestic airlines, now has 55 fully certified members, and has 74 memberships being processed. Requirement that taxi operators carry $40,000 liability insurance per seat has delayed completion and acceptance of some applications . . .

Local Service Lines Show Big Traffic Gains

Increase in all categories of traffic were registered by the local service airlines during the second quarter of 1951, according to reports filed with the Civil Aeronautics Board. Gains over the same period in 1950 amounted to 60.9% in total number of revenue passengers carried, 75% in revenue passenger-miles, 50.4% in mail ton-miles, 72.5% in express ton-miles and 37.7% in freight ton-miles. Total revenue ton-miles were 72.3% over 1950 figures and revenue plane-miles were up 24.2%.

The local lines, in making the most of the current traffic upswing, carried 405,973 passengers a total of 85,478,000 revenue passenger-miles in the April-June, 1951, quarter, better than a 50% improvement, as compared with 252,187 passengers traveling 48,837,000 miles in the same period a year ago. Average passenger load factor was 41.04%, a gain of 23.3% over the load factor of 33.26% averaged in the second quarter of 1950. Greater number of available seat-miles flown, 208,265,000 vs. 146,791,000, contributed materially to the improved load factor.

Growth of the local carriers in air express was spectacularly demonstrated with an increase from 142,563 ton-miles in the second quarter of 1950 to 245,992 ton-miles this year, a gain of 72.5%. The development of air mail continued with ton-miles up from 132,194 to 198,884 and total ton-miles of air freight carried were 245,232 compared to 177,989.

Especially notable traffic gains were reported by All American Airways, Lake Central Airlines, Piedmont Airlines, Pioneer Airlines and Robinson Airlines. Out of the eighteen carriers reporting, Lake Central, Piedmont, Robinson and Southwest Airways had the distinction of achieving load factors in excess of 50%.

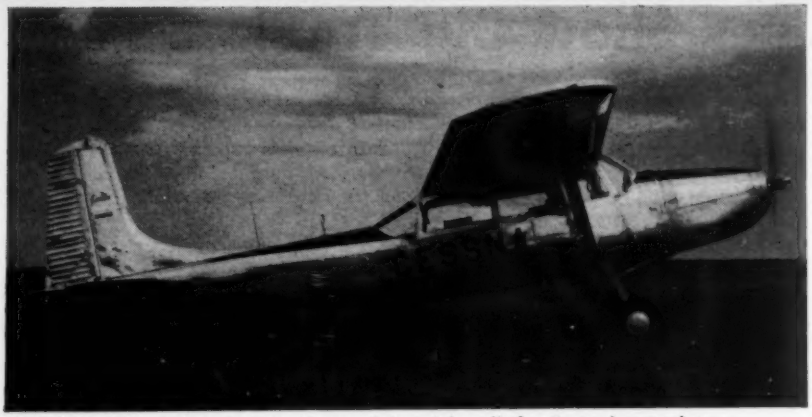
Local Service Airline Traffic April-June Quarter, 1951-50 Compared

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
All American	57,898	8,191,000	17,652,000	46.40	14,374	36,961	. . . .	852,520	2,017,439	42.26	840,600	830,326	98.87
1950	41,639	5,922,000	17,168,000	34.49	11,124	29,976	. . . .	620,875	1,962,741	31.60	817,809	831,201	97.73
Bonanza	7,651	1,970,000	4,753,000	41.45	1,738	777	4,602	188,782	495,603	38.09	234,242	232,596	98.66
1950	4,955	1,178,000	4,598,000	25.62	1,353	562	3,262	110,058	465,992	23.61	230,998	232,596	98.96
Central	7,280	1,039,000	6,423,000	16.18	5,370	1,068	445	108,797	731,009	14.88	354,449	356,336	99.01
1950	2,858	333,000	1,421,000	23.43	3,886	. . . .	. . . .	36,063	136,834	26.35	473,691	477,828	98.29
Empire	13,956	2,656,000	6,868,000	38.67	6,239	5,521	. . . .	257,117	724,877	35.47	327,102	330,674	99.77
1950	10,827	2,257,000	5,975,000	37.77	4,809	4,736	. . . .	221,382	589,597	37.54	284,555	278,718	99.53
Frontier	26,888	7,178,000	22,571,000	31.80	33,170	22,018	87,448	863,165	2,144,819	40.24	1,127,994	1,135,061	98.08
1950 *	15,075	4,186,000	15,452,000	27.08	15,344	13,080	41,436	488,087	1,654,593	29.49	836,050	846,644	98.53
Lake Cent.	16,118	8,312,000	14,178,000	58.63	3,233	19,929	. . . .	888,845	1,933,606	45.97	648,492	313,392	92.75
1950	4,124	1,013,000	3,186,000	31.79	1,457	5,606	207	100,928	331,781	30.42	258,937	234,416	95.90
MCA**	11,265	2,350,000	5,170,000	45.45	5,825	11,778	9,866	251,969	590,893	42.64	246,205	246,428	99.33
1950	Carrier did not begin operations on local service route until September 26, 1950.												
Mid-West	701	105,000	803,000	13.07	2,537	. . . .	. . . .	11,006	88,304	12.46	200,692	225,272	89.09
1950	1,944	285,000	1,582,000	18.00	4,902	. . . .	. . . .	27,950	174,327	16.03	396,198	450,720	87.85
Ozark	12,178	2,019,000	10,906,000	18.51	5,869	18,012	. . . .	208,253	1,058,991	19.66	532,129	542,421	97.46
1950	Carrier did not begin operations until September 26, 1950.												
Piedmont	50,451	11,709,000	22,202,000	52.74	16,133	23,012	34,372	1,103,118	2,537,362	43.47	1,057,234	1,034,608	99.83
1950	33,109	6,755,000	20,033,000	33.71	13,086	19,123	35,984	714,708	2,289,278	31.21	956,535	957,760	99.36
Pioneer	42,131	11,012,000	24,094,000	45.70	26,333	11,405	39,746	1,183,213	2,420,574	48.88	1,008,573	980,391	99.81
1950	32,445	8,797,000	22,286,000	39.47	22,631	11,858	36,241	954,881	2,227,095	42.87	927,540	933,843	99.23
Robinson	26,699	4,151,000	8,047,000	51.58	6,749	16,541	9,597	399,813	784,829	50.94	391,251	374,065	97.34
1950	15,055	2,353,000	5,716,000	41.16	5,458	8,859	7,611	222,599	639,228	34.82	291,287	281,472	97.95
Southern	24,419	4,408,000	16,568,000	26.60	22,779	22,676	. . . .	466,783	1,496,682	31.19	789,302	788,848	99.41
1950	8,976	1,495,000	9,178,000	16.28	10,391	11,958	. . . .	165,239	828,739	19.93	436,868	437,710	99.80
Southwest	36,685	7,411,000	13,726,000	53.99	15,989	13,249	32,941	805,635	1,568,760	51.35	653,650	634,448	98.01
1950	31,547	5,807,000	12,609,000	46.05	12,185	13,961	36,290	644,897	1,261,633	51.11	600,492	598,220	99.12
Trans-Texas	19,582	4,702,000	15,649,000	30.05	13,587	6,960	14,913	512,046	1,570,208	32.61	743,468	735,568	99.77
1950	15,889	3,523,000	15,670,000	22.48	13,541	6,578	14,940	388,623	1,400,563	27.74	746,221	746,746	99.82
West Coast	24,562	3,851,000	7,935,000	48.53	4,199	3,318	11,302	364,241	760,089	47.92	384,632	357,448	99.62
1950	20,098	2,827,000	7,202,000	39.25	1,827	4,090	2,018	262,232	744,247	35.23	342,885	344,108	99.19
Wiggins	1,242	115,000	586,000	19.62	412	859	. . . .	11,481	64,562	17.78	152,108	186,470	78.71
1950	766	64,000	362,000	17.68	501	. . . .	. . . .	5,746	36,122	15.90	91,930	111,177	81.21
Wis. Cent.	26,267	4,299,000	10,134,000	42.42	14,348	31,908	. . . .	449,790	884,270	50.86	511,311	525,222	97.06
1950	12,880	2,042,000	4,353,000	46.91	9,699	12,176	. . . .	214,278	453,030	47.29	520,750	541,734	96.04
TOTALS	405,973	85,478,000	208,265,000	41.04	198,884	245,992	245,232	8,926,574	21,872,877	40.81	10,203,434	9,809,574	98.06
1950	252,187	48,837,000	146,791,000	33.26	132,194	142,563	177,989	5,178,546	15,195,800	34.07	8,212,796	8,304,893	97.91
						Helicopter Mail Service							
HAS	. . . .	. . . .	. . . .	. . .	6,006	. . . .	. . . .	6,006	16,988	35.35	84,783	89,309	94.93
1950	. . . .	. . . .	. . . .	. . .	5,305	. . . .	. . . .	5,305	13,308	39.80	86,245	87,475	98.59
Los Angeles	. . . .	. . . .	. . . .	. . .	13,566	. . . .	. . . .	13,566	39,286	34.53	92,038	93,536	97.79
1950	. . . .	. . . .	. . . .	. . .	11,207	. . . .	. . . .	11,207	34,585	32.40	89,137	90,891	98.07

* Figures for 1950 are a combination of Challenger Airlines and Monarch Air Lines figures, since companies merged and began operating under the name of Frontier Airlines, Inc. on June 1, 1950.

** Figures cover only local service segment (route 106) which was awarded MCA by CAB in the Parks Air Lines Investigation Case.

NOTE: Figures include both scheduled and non-scheduled operations.



MODEL 308's performance is improved by eight-cylinder Lycoming engine.

New Cessna Test-Flown for Military

Four-place, 375-horsepower liaison plane has more than 1,000-pound payload, 800-mile range.

A NEW four-place military liaison plane, Cessna Aircraft model 308, has been test flown at the Cessna factory.

Primarily designed with requests made by the Army, Air Force and Marines in mind, the new Cessna may be used for military liaison, observation, reconnaissance, photography and light cargo as well as for courier and ambulance service. The plane is built to carry four persons or two litter patients, a pilot and an attendant.

Improved capacity and short-field performance over previous models has been obtained by the installation of an eight-cylinder, direct-drive Lycoming engine rated at 375 take-off horsepower.

Military payload is expected to be "over 1,000 pounds" with gross weight predicted at 4,200 pounds and empty weight 2,682 pounds. Power loading of the 308 is 11.2 pounds per horsepower. Though take-off and climb figures are not yet available, the range of the new ship is expected to be over 800 miles at gross weight.

Features of the 308 are its all-metal construction, distinctive spring-steel landing gear, Hamilton Standard propeller and fully equipped instrument panel.

High-Lift Flaps

The Cessna 308 should be able to take almost any type of unprepared landing surface in stride. In an effort to provide excellent landing and take-off characteristics, Cessna has provided high-lift flaps, plenty of reserve horsepower and the wide, springy landing gear.

Good all-round visibility has been obtained by placing the seats as low as possible below the line of the wing and wide window space. The 47-foot wing span should give the plane maneuverability at low speeds, so necessary to military pilots.

Cessna officials plan studies and tests by both the company and the military plus an undetermined period of service testing before putting the 308 model into production.

Should future markets warrant it, consideration may be given to producing the ship for special civilian uses.

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Revisions to CAA Airworthiness Directives

Luscombe Model 8C aircraft A. D. Note 50-37-1 is revised to include another satisfactory installation of wing fuel tank. Luscombe service letter, dated August 4, 1947 'Method of Effecting Engine Change for Increased Horsepower' pertains.

•

Cessna model T-50 is approved with equipment weight and balance as indicated by a plus or minus sign preceding weight of the item. To indicate that approval has been obtained by other than the aircraft manufacturer an asterisk appears in the specifications.

Such items include: Engines—2 Lycoming R-680-E3; two Davis aircraft exhaust silencers Model D-450-78; and Surface Combustion Heater Package cabin heater model 15, according to Spec. #A-722, revision 5, dtd April 18, 1951.

•

Aeronca 15AC series specifications are changed to include installation of a Cleveland Model DHB-3 wheel assembly no. C-38500H and brake assembly C-2000H.

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The Washington View

By Vera Foster

A POLL conducted by National Aviation Trades Assn. has revealed that about 40% of the commercial pilots engaged in agricultural flying are in a military reserve category—that is—around 2600 pilots. Another 21%, 1400 pilots, are subject to the draft.

These agricultural pilots are hard to replace, NATA asserts, and should be placed on the Dept. of Labor's list of critical occupations to prevent further attrition of their ranks. The extra-hazardous flying, low yearly pay, and amount of training and experience needed make these pilot jobs hard to fill.

•

To install a low-cost airport lighting system you might consider Ray Classen's $225 installation at his flight strip at Danforth, Illinois. Flying Farmer Classen dug a small trench with his tractor, laid a wire, and used regular 15-watt light bulbs in all-weather sockets atop metal marker reflectors.

•

At the recent annual airworthiness review of civil air regulations, a new principle in specifying lightplane strength criteria was adopted. Regulations themselves are to be written in somewhat general terms, while specific standards for aircraft components are to be more precisely defined in a separate manual. The idea is to simplify strength criteria generally, and to avoid needlessly inflexible regulations. Similar policy is evident in the government's rejection of a proposal to standardize lightplane automatic pilot installations to conform with existing requirements for transports. Reason given was that decision on any standard at this time would tend to retard further development of autopilots for smaller planes.

•

The Veterans Administration is attempting to rule that veterans may no longer continue flight training courses according to normal progression—that is commercial, instructor, multi-engine, instrument. A veteran may now "elect" only one more course other than the one for which he was enrolled when the August 23rd deadline rolled around.

Organizations representing operators are fighting this change of policy.

•

Have you been into the private airport at the Lapham's Flying L Ranch in Bandera, Texas? It's a Texas dude ranch that agreeably mixes horses, airplanes, swimming and lounging. Here's one way to make an airport pay off—by making it a place to spend a vacation.

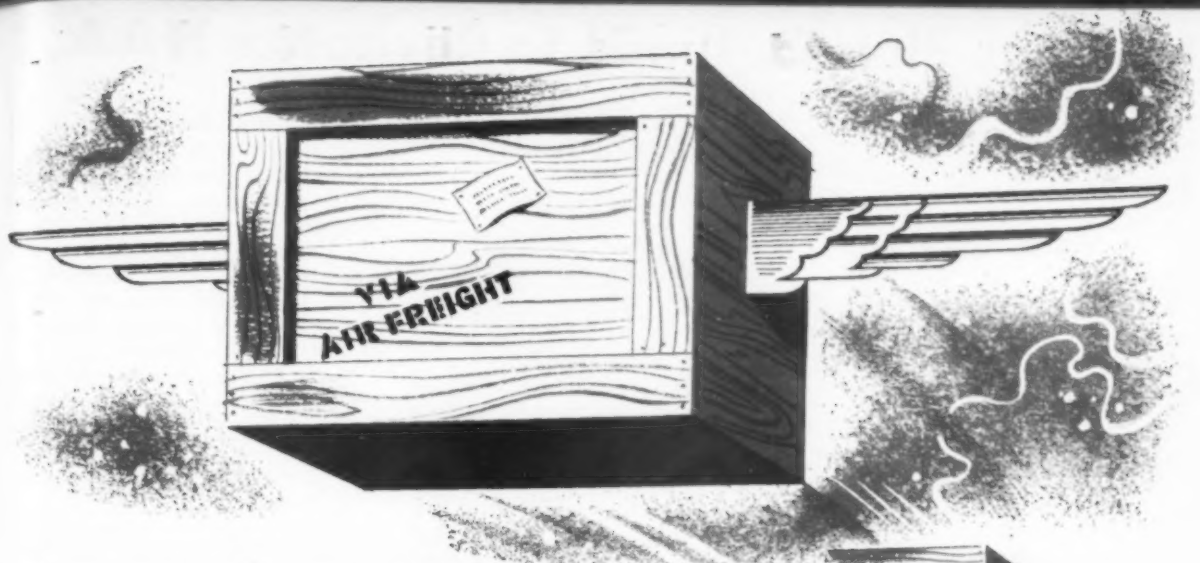
Another combination that pays is Bill Janssen's "Skytel" in McPhereson, Kansas. Features of his airport include a modernistic filling station which services aircraft on one side and cars on the other, maintenance and hangar services, crop spraying and a cafe open 24 hours a day.

•

CAA is still interested in renting 10 Aerocars but the company has so far been unable to find the capital with which to build the flying automobiles.

•

Another step in the trend to include flight training in academic curricula is evidenced by the Middle Tennessee State Teachers College at Murfreesboro which is offering 21 hours' credit toward graduation to students enrolled in the commercial flight course. The 147 college students in flight training during the spring quarter of 1951 at this small college paid the operator for their flight and ground training themselves. Here, it seems, is a source of revenue well worth cultivating for operators near such institutions.



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14-Point Plan Outlined to Revitalize NAA

Webster will present "package" to new board of directors at Omaha meeting Nov. 2.

By KEITH SAUNDERS

A DYNAMIC, forward-looking program aimed at revitalizing the National Aeronautic Association will be laid before NAA's new board of directors at its initial meeting in Omaha on November 2.

Donald D. Webster, new NAA president, is confident that if the directors adopt the plan, of which he is principal author, the Association within the next few months can begin not only to regain but actually to exceed its former position of influence in aviation.

Webster, Washington insurance man, private pilot and president of NAA-affiliated Aero Club of Washington, stated flatly: "National Aeronautic Association was for many years the principal voice of aviation in this country, if not the world, and it can be that again."

It's an ambitious program. Only a decade ago NAA, with 18,000 members, a substantial budget and a sizable staff, was making itself heard in aviation matters. Today it is an ailing, moribund organization of about 6,000 members, a slim budget and a skeleton staff (they even let the switchboard operator go); activities and influence are at lowest ebb.

Wants 60,000

Webster's plan, which he feels can boost NAA membership to a minimum of 60,000 and possibly to 100,000, is to offer every one who is interested in furthering aviation and air power (1) a program—"a good package" as Webster puts it, and (2) a reasonable membership fee. If this is done, he feels, no organization from top level industry to hometown flying club could afford *not* to belong to NAA.

Rejecting the suggestion that NAA might do well to merge with the National Air Council, Webster had this to say:

"It is my personal opinion that, although individual members have lately been dissatisfied, and justifiably so, with NAA performance, the National Aeronautic Association has much fine tradition . . . is the best-known aviation organization, has the most prestige, and can, if revitalized, gain terrific support and backing."

The new NAA president is convinced, however, that only by working upwards from "grass roots" can the organization become an effective link between public interest and the many aviation activities which comprise American air leadership. Moreover, in order to recapture the interest of thousands of former NAA members and many additional thousands who have never been affiliated, Webster realizes that NAA must offer a tangible program with real advantages for individual membership. To this end, he proposed the following 14-point program, under which NAA will:

Don Webster

1. Encourage and take the lead in a broad program for American youth aviation education, through affiliate members such as the Academy of Model Aeronautics, the Ninety-Nines, the Civil Air Patrol, and others.

2. Have an annual forum for all affiliate members, where all aviation interests can be represented for a mutual exchange of constructive ideas and an opportunity to understand each other's viewpoints and problems.

3. Continue official aviation time and record keeping.

4. Qualify as a powerful voice in supporting and developing sound national aviation legislation and regulation.

5. Assist in the support of a national aviation monthly publication, which would fairly disseminate information of interest to all phases of aviation.

6. Offer personal insurance benefits at rates far below those at which an individual could obtain similar coverage.

7. Provide members with a rent-a-car and rent-a-plane credit deposit service, which is both helpful and convenient.

8. Furnish pocket identification cards and the famous NAA lapel wings to all members.

9. Continue as the American FAI representative, assisting American interests in international aviation affairs, *and* encouraging American aviators to establish new international records.

10. Establish a permanent Washington Information Center for Air. Out-of-towners will have a headquarters for assistance and information relative to *any* matter pertaining to aviation.

11. Compile a national register of *all* flying clubs and *all* pilots, and *all* CAA-licensed aircraft.

12. Encourage chapters in key U. S. cities to engage in monthly social and business activities.

13. Continue honoring aviation leaders to spark the presentation of the Collier, Wright, and Brewer trophies and take the lead in recognition and honor to all men and women who should be glorified for their advancement of American aviation.

14. Sponsor at least one annual flight roundup for the pilot and plane-owner members. This would be in conjunction either with the annual convention or with a national air show.

Four Classes

To offer all these advantages, it would be essential, of course, that NAA have a large membership—much larger than at present and even greater than in its heyday. To acquire such a roster, NAA as the parent organization would solicit four suggested classes of membership, as follows:

1. **The Industry Group** (patron contributing member).
2. **Membership Organizations** (senior sustaining).
3. **Chapter Group** (regular).
4. **Flying Club Group** (special).

For the flying club group, Webster suggests a flat annual fee of $20.00, plus $.50 for each member over a minimum of 10.

In the Membership Organizations group, which is to take in such diverse organizations as the Early Birds, The Institute of the Aeronautical Sciences, the National Flying Farmers Association and the Civil Air Patrol, a flat fee of, say, $500 is suggested, plus $.25 for all in excess of 1,000 members.

In the Chapter Group, all present chapters will be included, and an ef-

fort made to organize others in active aviation communities. Chapters are to be assessed a flat annual fee of around $100 plus $.50 per member for all over 100 members.

In the Industry Group, which includes airlines, aircraft manufacturers, petroleum companies and others, a flat fee of perhaps $500 a year is to be levied.

Under this program, NAA's present fee of $3.00 from each chapter member and $5.00 a year from each independent member will be abolished, and the cost of NAA membership to most individuals will go down to 50c a year—to some as low as 25c a year.

Airport People

Charles Hamilton has resigned as manager of Orange Airport, Athol, Mass.

Bob Maier has been employed as manager of the Pauls Valley, Okla., airport, succeeding **Bruner Alexander**, resigned.

James Acker, manager of the Beatrice (Nebr.) Municipal Airport, has been recalled to active duty as an Air Force ROTC instructor at the University of Nebraska.

Neil Withrow has resigned as supervisor of airports with the Nebraska Dept. of Aeronautics to enter private business. **Orville Rae** is his successor.

CAA Airport Grants

Federal-aid grant offers totaling $936,003 were made by the Civil Aeronautics Administration during the month of August to 19 communities, as follows, with airport classes in parentheses:

Alaska: Dillingham (3), $22,500; Eagle (2), $112,500; Quartz Creek (2), $72,000.

Arizona: Ernest A. Love Municipal, Prescott (5), $14,829.

Colorado: Stapleton Airfield, Denver (6), $125,306.

Idaho: Weiser Municipal (2), $2,732.

Iowa: Fort Dodge Mun. (3), $232,000.

Maine: Augusta State Airport (3), $145,000.

Maryland: Harbor Field, Baltimore (3), $7,500.

Montana: Missoula County Airport (4), $8,153; Hamilton Mun. (2), $936.

New York: Richards Field, Massena (3), $12,000; Warren Co. Airport, Glens Ferry (3), $20,000.

North Carolina: Grannis Field, Fayetteville (3), $700.

Oregon: Roseburg Mun. (3), $6,250.

Tennessee: Memphis Mun. (5), $91,541.

Texas: Lubbock Mun. (5), $35,087 (two grants).

Washington: South Bend-Raymond (2), $5,369.

Wyoming: Mondell Field, Newcastle (2), $21,600.

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Airport News Digest

Plans at Wayne Major: Sale of $8,000,000 in self-amortizing revenue bonds with which to finance construction of a terminal building and airline hangars at Detroit-Wayne Major Airport has been proposed by the airport committee of the Wayne County Board of Supervisors. Approval of county voters is not required for such an issue. The committee said its decision to ask for the authorization was based on an indication from the airlines serving Detroit that they would be willing to transfer their operations from Willow Run Airport to Wayne Major upon expiration of their present leases next year, provided passenger and hangar facilities were provided at the county field.

KC Building Expansion: Preliminary plans for a million-dollar expansion of the administration building at Kansas City's Municipal Air Terminal are being drafted, and it is hoped construction can start next spring. New structure, which will more than double the existing floor space of the terminal, is to be financed through sale of revenue bonds. Meanwhile, Kansas City is going ahead with plans to build a new auxiliary airport to replace Grandview Airport, being taken over as headquarters for the Continental Air Command. Commercial airlines are to continue using Municipal Air Terminal, while new field accommodates airline maintenance bases, fixed-base operators and private and corporation flying as well as serving as an alternate when nearby Municipal is fogged in.

ADMINISTRATION BUILDINGS

• **Contract for $264,617** for construction of an administration building at Hector Airport, Fargo, N. D., has been let.
• **Ground has been broken** for new $231,764 administration building at Rosecrans Field, St. Joseph, Mo.
• **Low bid of $860,333** for construction of new office wing and control tower at Denver's Stapleton Airfield was about 20% below city's estimates.
• **Plans for construction** of a glassed in concourse just east of present entrance to administration building at Omaha Municipal are being considered.
• **Dayton's 10-year-old plans** for a permanent passenger terminal at the municipal airport are up for "exploratory review" again before the City Commission, but no early action is promised.
• **Work on new administration building** at Nantucket (Mass.) Airport is well along.
• **New administration buildings** have been completed at the following Nebraska airports: Beatrice, Wahoo and Minden.

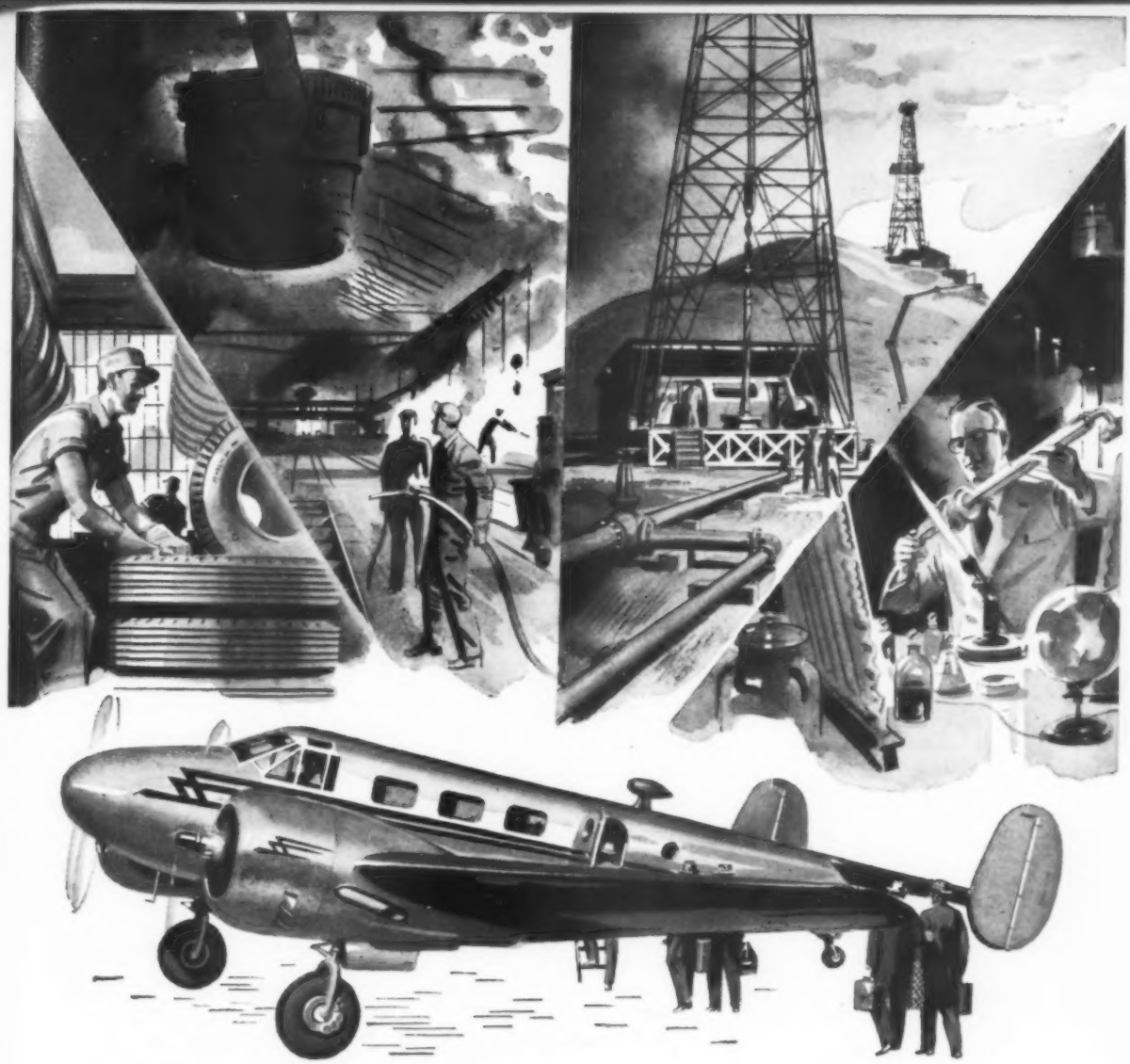
RUNWAYS, OTHER PAVING

• **Bids will be opened Sept. 18** for $1,700,000 improvement program at Lambert-St. Louis Municipal, including a new 5400-ft. N/S runway, a 2700-ft. extension to existing E/W runway, and 6000 ft. of taxiway in vicinity of proposed new terminal.
• **Contract for $571,174** for reconstruction of NW/SE runway at Buffalo Municipal has been let.
• **A new 10,000-ft. heavy duty concrete runway** is to be built paralleling present 7000-ft. N/S runway at Tulsa Municipal as a joint Air Force-Douglas Aircraft project.
• **Contract has been let** for construction of two asphalt taxiways and an apron in front of terminal at Laramie (Wyo.) Municipal.
• **War-damaged** runways and roadways at New Orleans Airport are to be repaired by Federal government at cost of $222,951.
• **Low bid for restoration** of war-damaged runways and other facilities at Eaker Airport, Durant, Okla., was $298,310.
• **City of Denver** is preparing to condemn remaining land needed for extending main east-west runway at Stapleton Airfield by 1500 feet.

MISCELLANEOUS

• **Massachusetts Legislature** has been asked by Governor Dever to approve a $2,600,000 bond issue to finance a hangar at Logan International Airport for lease to American Airlines.

KEITH SAUNDERS



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IN FLIGHT

A PAGE FOR ALL PILOTS

'Guilty' by Accusation

CAA has "enthusiastically embraced" a new procedure for imposing civil fines on airline pilots, according to the Air Line Pilots Association. The deal, ALPA reports, works like this:

Any pilot cited by CAA as having violated Civil Air Regulations is subject to civil penalties up to $1,000 for each offense. CAA can also institute proceedings to suspend or revoke the pilot's license. Because CAA has instituted these proceedings for "highly technical violations and upon the flimsiest evidence," ALPA has worked with the pilots to prevent unjust penalties.

Consequently CAA, through the Administrator, has resorted to requesting the offending pilot to pay the fine to "compromise" the alleged violation. By paying the fine the pilot prevents further action but, innocent or guilty, has his record credited with the violation. If the pilot does not accept the compromise penalty, CAA simply turns the case over to the U. S. Attorney. In this manner the U. S. Government files a suit against the pilot in the Federal District Court.

Tendency is for the pilot to accept the fine to avoid legal proceedings and related loss of time and money. Says ALPA: "This variety of legal extortion is ideally suited to the Administrator's purpose. He can maintain a high percentage of 'convictions' merely by delegating the work elsewhere."

ALPA's legal staff is attempting to correct this method of handling alleged violations and has urged members that in the meantime they use their CAR-delegated emergency authority when in doubt as to the legality of any flight procedure and that, when cited for violations, all reports of the incident be cleared for legal significance through ALPA headquarters.

ALPA Considers New Fiscal Set-Up

A recommendation that the salary of the president of the Air Line Pilots Association should be "at least equal to that of a top-bracket pilot" will come up for consideration before the ALPA Executive Committee when litigation contesting the committee's ouster of David L. Behncke as president has been ended.

This is one of 17 recommendations pertaining to ALPA's fiscal set up made by the sub-committee which handled the ALPA reorganization plan. Others are as follows:

1. The salary of the executive vice president should be approximately $9,000 for the first two years and thereafter should be approximately $12,500.

2. There should be created a full-time position of secretary-treasurer.

3. The secretary-treasurer should prepare an annual budget for consideration by the Executive Committee.

4. Members of ALPA should exercise greater control over the finances of the Association.

5. There should be a thorough financial audit of ALPA's books at least once a year.

6. An accounting system should be set up, including control accounts.

7. Proper reserves should be set up for doubtful accounts.

8. When suitable arrangements have been made for payment of dues, assessments, fines, or fees, the member in question should not be listed as delinquent as long as his payments are current.

9. Overpayment of strike assessments should be credited to the respective members' dues, as was done in the recent United Air Lines case. But in the case of old strike assessments prior to and including the National Airlines strike, the bookkeeping problems involved now would be too great. The amounts carried on the books as belonging to these funds should be merged with the general fund.

10. More adequate reserves should be built up through careful business management.

11. A mutual-aid plan should be activated forthwith.

12. Accounts payable should be shown in the Association's books.

13. The president and the secretary-treasurer should sign all checks for more than $500, but the head of the bookkeeping department or some other suitable employe should draw smaller checks for routine expenses.

14. A more business-like system of petty cash vouchers should be established.

15. A more thorough accounting system should be set up in order that expenditures now listed as "extraordinary" may be more properly defined.

Hearing was set in Chicago last week on Behncke's $2,200,000 suit against the ALPA directors and on their petition for an injunction prohibiting him from acting as president of the union.

Maximum Flying Times

Among the U. S. airlines, monthly flight time of pilots is limited to 85 hours. By contrast, the President's Emergency Board (reporting on the American Airlines/Air Line Pilots Association dispute) states that in Alaska the limitation is 300 hours in three months, while in Mexico it is 100 hours per month and in Great Britain 125 hours per month. Most countries, the Board says, have no limit. From this report on maximum allowable flight times, it would seem that these differences between U. S. and other countries are proportionate to those existing in all fields of endeavor. It might be noted that the U. S. airline safety record, according to government reports, is about three times better than that of any foreign country. Many factors influence this condition. Perhaps shorter maximum flight time is one of them.

Another Reminder

The Civil Aeronautics Board has granted an additional month for civil pilots to obtain their Airman Identification Cards, moving up the deadline from September 1 to October 1. The cards may be obtained at CAA regional offices.

THE BULLETIN BOARD

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Books

AIRCRAFT ENGINES OF THE WORLD, *1951 Edition, edited and published by Paul H. Wilkinson at 225 Varick Street, New York 14, N. Y. 324 pages, illustrated.*

This is the ninth edition of Wilkinson's popular and very thorough engine yearbook, probably the most complete and up-to-date compilation of aircraft engine data available. The book contains complete specifications of 57 gas turbines and 77 of the latest piston-type engines, with an illustration of each.

Wilkinson also reveals some new data on Russian progress in the aircraft engine field. The Russians now have a production jet, he says, which develops as much as 8,800 pounds thrust wet. The engine is identified as the M-018, a large axial flow turbojet based on the German BMW design, which was in an early stage of development at the end of World War II. It has a three stage turbine and a normal dry rating of 7,700 pounds thrust.

Wilkinson rates the M-45 Chelomey Nene, power plant for the MiG-15 jet fighter, at 5,000 pounds thrust dry and 5,750 pounds thrust wet. However, it is being modified to bring it up to a 6,250 pound rating.

Other Russian engines listed in "Aircraft Engines of the World" include the M-012, an axial turbojet developed from the German Junkers Jumo 012, which develops 5,500 pounds thrust dry and 6,600 pounds thrust wet; the M-003R, also a development of a German design, which features a jet rocket combination for interceptors developing 6,500 pounds thrust; and the M-004H, an axial turbojet with a two-stage turbine developing 4,600 pounds thrust.

Wilkinson also discloses American progress in reduction of fuel consumption rate in jet engines. Some American production engines are now attaining fuel consumption rates as low as .90 pounds per pound thrust per hour. The book lists the fuel consumption rate of the Allison J-35-A-23 (9,700 pounds thrust) as .90 and that of the Wright J-65 Sapphire (7,200 pounds thrust) as .91.

The front section of the book covers briefly all new developments in the engine field, including both piston and jet types and accessories. The remainder of the book is devoted to detailed specifications of engines, mainly production types, being built in the U. S., Great Britain, Belgium, France, Sweden, Australia, Czechoslovakia, Italy, Spain and the U. S. S. R.

AIR TOURING GUIDE TO EUROPE. *1951-1952. Published by The Royal Aero Club Aviation Centre, 19 Park Lane, London, W.1. Price 7/6d. ($1.05).*

Here is complete information for flying your own airplane in Europe. There are notes on pre-flight planning, an eight-language aviation vocabulary, details on airports of 19 countries, radio facilities, hangar fees, conversion tables and sunrise and sunset tables. There are also 24 charts of the more prominent airports and other useful data. It would be difficult to imagine a more complete book of information.

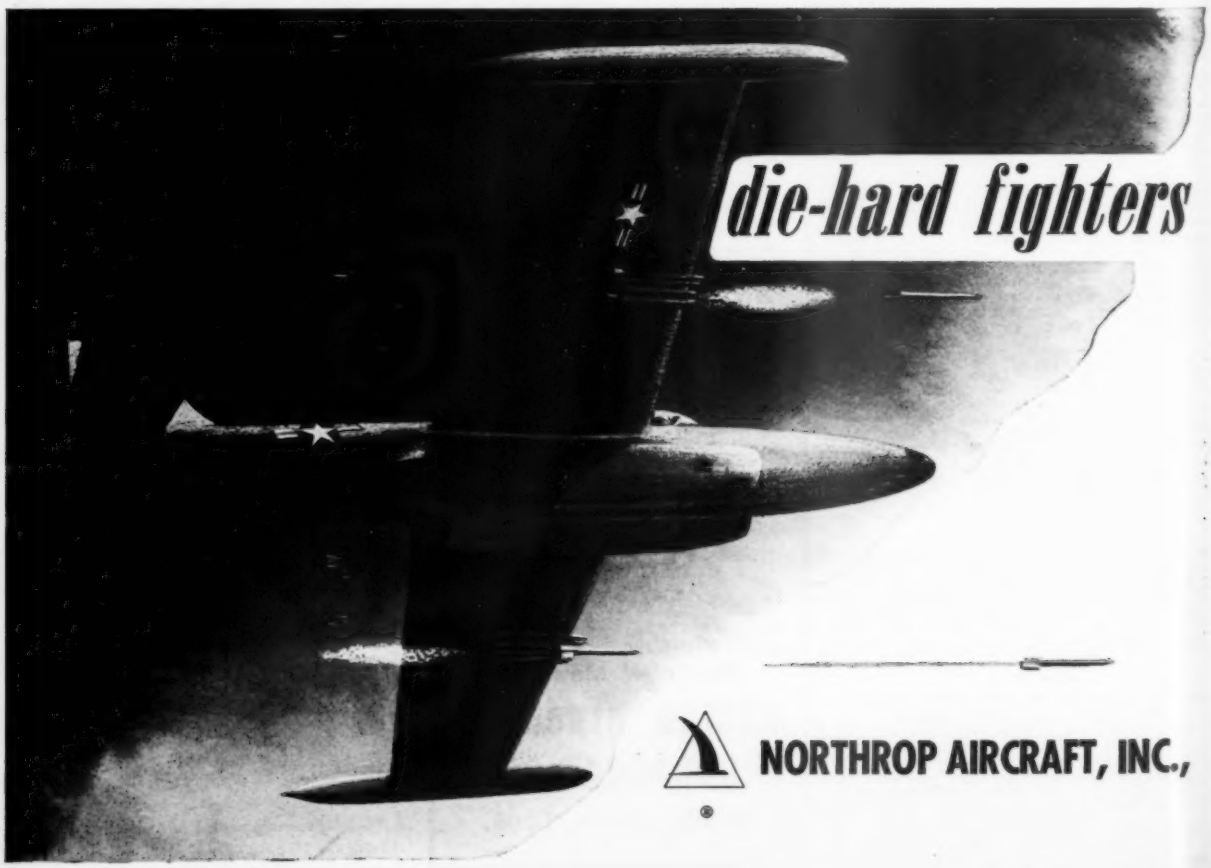
ARCHITECTS OF AVIATION. By Maurice Holland. Preface by Jimmy Doolittle. 214 pp. Illust. Published by Duell, Sloan & Pearce, New York. $4.00.

The old-timers of aviation will like this book by Maury Holland who served as a signal corps officer in 1917-20 at Taliafero, Wright and McCook Fields and participated in the experiments which opened up the advance of flight. It is the story of twelve men, not so well known as the Wrights, Glenn Curtiss, Lindbergh and others, who made vital contributions to the science of flight

These twelve are Jerome Hunsaker, Thurman H. Bane, Erik Nelson, Donald L. Bruner, Alexander Klemin, Albert W. Stevens, Edward L. Hoffman, William B. Stout, Edward O. McDornell, Charles L. Lawrence, Juan T. Trippe and Glenn L. Martin.

INSECT CONTROL BY CHEMICALS, *by Prof. A. W. A. Brown, B.Sc.F., M.A., Ph.D. 532 pp. 439 illustrations. John Wiley & Sons, Inc., New York, N. Y. Price $12.50.*

Basic principles of entomology are presented in this textbook together with a detailed presentation of the facts and



theories on the chemical, physical and toxicological aspects of insecticides. Hazards to plants and animals are thoroughly treated and complete descriptions and illustrations of modern applicating equipment given. Of particular interest are the chapters on aircraft use for dusting and spraying. Details are relegated to 2300 references given, which supply exhaustive coverage of the field.

Perhaps for the first time, a complete reference text is available to agricultural applicators, chemists and entomologists.

OUR FIGHTING "JETS", *by Maj. C. B. Colby, 48 pp. Illust. Published by Coward-McCann, Inc., New York City. Price $1.00.*

This book contains in-flight photographs, profiles, and vital statistics of 22 Air Force and Navy jet combat planes, with a brief text devoted to each type.

OBITUARY

Maj. J. S. Stocks

Maj. J. S. Stocks, director general of civil aviation for Pakistan, died in a Melbourne hospital while in that country as a guest of the Australian government. He was 58 years old.

M. A. Skobba

Milton A. Skobba, purchasing agent and personnel manager for Pacific Northern Airlines, died in Seattle last month of a heart attack at the age of 48.

Prior to joining PNA in 1947, he had been employed with the Boeing Airplane Company.

Earl D. Barnes

Earl D. Barnes, one of the early "barnstorming" pilots and first pilot to fly the Cincinnati-Chicago air mail route, died in Cincinnati at the age of 54.

Gordon Reel

Gordon Reel, pioneer aviation engineer, who had an important part in the building of La Guardia Airport, Floyd Bennett Field and the East River Seaplane Terminal in New York, and the Treaty Air Base at Bermuda, died in New York at 80 years of age.

Wings of Yesterday

25 Years Ago

Paul Henderson was elected president of the Aeronautical Chamber of Commerce for 1926-27, with Frank H. Russell 1st v.p.; Charles H. Colvin, treasurer; C. Townsend Ludington, secretary; Samuel S. Bradley, general manager and Frederick B. Rentschler, 2nd v.p.

•

An arrangement was made between the Post Office Departments of the U. S. and Mexico to connect Mexico with the contract air mail service between Dallas and Fort Worth, Tex., and Chicago, Ill., and the trans-continental air service from Chicago to New York.

•

Grants totaling approximately $600,000 were authorized by the trustees of the Daniel Guggenheim Fund for the Promotion of Aeronautics, Inc. for Leland Stanford University and California Institute of Technology.

10 Years Ago

(In American Aviation)

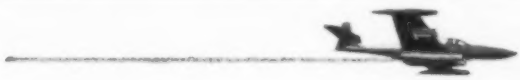
Army, Navy and OPM, in the face of rising pressure from small business firms and labor unions, endorsed a broad program to encourage increased subcontracting of defense orders. Plan, which entailed revised purchasing procedures, was to require detailed statements of subcontracting intentions on all bids submitted for defense work.

•

Defense Plant Corp. awards for construction of new aircraft plant facilities, although decreasing in dollar volume, were increasing in total number of authorizations. Awards were largely for parts and accessories production for the 500-bombers-a-month program.

•

CAA, for the first time, was to venture into construction, operation and maintenance of airport control towers, and eventual coverage of 100% of U. S. civil airways. Funds were approved for the creation of nine additional airways traffic control centers and for federal control of 39 airports still operated jointly by military and civil personnel.



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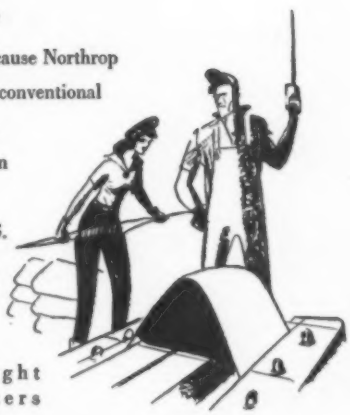

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United Air Lines
St. Paul, Minn.
October 24, 1947

Irma Olson
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October 25, 1947

Muriel Barberree
Northwest Airlines
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Byrnel Heinig
Northwest Airlines
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October 27, 1947

Marvin L. Taylor
Santa Fe Skyway, Inc.
Chicago, Ill.
October 27, 1947

Marie Muether
United Air Lines
Chicago, Ill.
October 28, 1947

Al Vint (QB)
Snyder Aircraft
at Chicago, Ill.
October 29, 1947

Mildred Hammerquist
United Air Lines
Chicago-New York
October 29, 1947

Joanne Leeper
United Air Lines
Chicago-New York
October 29, 1947

Paul Robert
Air France
at Wood-Ridge, N. J.
November 6, 1947

BOEDY'S ALBUM

C. J. "Chris" Venter
South African Airways
at Wood-Ridge, N. J.
November 7, 1947

E. F. "Ernie" Slatter
South African Airways
at Wood-Ridge, N. J.
November 7, 1947

Juan Jorge Hahn
Atron Ltda. SRL
at Wings Club, N. Y.
November 7, 1947

Peggy & T. Gray
Wright Aeronautical Corp.
at Swiss Chalet
November 7, 1947

G. J. "Gus" Rauschenbach
Wright Aeronautical Corp.
at Swiss Chalet, Arcola
November 7, 1947

W. E. "Bill" Thornley
Elsie Thornley
at Swiss Chalet, Arcola
November 7, 1947

Elsie Thornley
(Mrs. W. E. "Bill")
at Swiss Chalet
November 7, 1947

Walter F. McGinty
Lowe Construction
at Wings Club, N. Y.
November 12, 1947

Serafin F. Ortuzar
Argentine Aero Com
at WAC, Wood-Ridge
November 13, 1947

Alberto G. Paz
Argentine Aero Com
at WAC, Wood-Ridge
November 13, 1947

David Feler
Argentine Aero Com
at WAC, Wood-Ridge
November 13, 1947

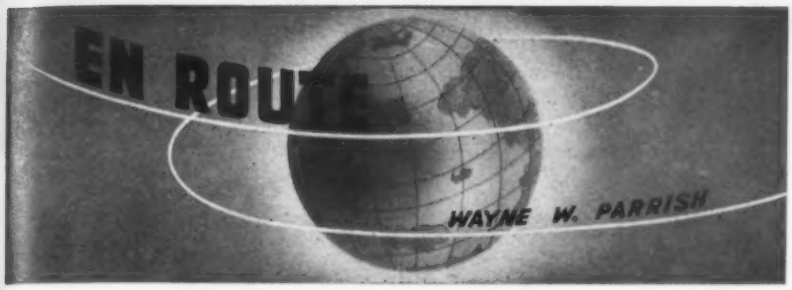
C. F. "Chuck" Nielsen
Lockheed Aircraft Corp.
at WAC, Wood-Ridge
November 13, 1947

Phyllis J. Yerke
Trans World Airlines
Newark-Chicago
November 18, 1947

Lyle T. Ryan
Trans World Airlines
Newark-Chicago
November 18, 1947

Adeline Wallace
American Airlines
Chicago-Springfield
November 18, 1947

Leroy C. Simpler
United States Navy
at Springfield, Ill.
November 19, 1947



Rijst-Tafel. I'm sorry folks, I left **Singapore** for **Bangkok** in the last installment (Sept. 3) and forgot all about telling you about a high adventure in eating that I had at the Hotel d'Europe in Singapore. So let's back track a moment.

I'm often asked about the so-called exotic foods that I encounter on traveling abroad, but at heart I'm just a meat and mashed potato and gravy guy from the midwest; very frankly, I dislike so many things (such as fish and cheese) that I rarely get off the beaten track.

But I can go for a *rijst-tafel*. Those Singapore folks were mighty hospitable and this special lunch was set up by the PAA boys; **Walt Johnson**, manager of Cal-Tex out there, **Walter Geddes**, the manager of Socony-Vacuum, and a nice gent by name of **Van Mecklenberg** of KLM. All the wives were along and it turned out to be a gala affair.

This *rijst-tafel* is a Dutch name for a vast Indonesian banquet, which in the old days in Indonesia used to consist of some 28 dishes, I'm told. We had a condensed version, but even the Carlton Hotel in Washington would pass out if it had to work up a feast like it. The basis is rice, which the Dutch spell rather fancily as rijst.

Pile It On. The idea is to put some rice on your plate, and the waiters come along with an unending array of stuff to add to the pile until you have a plate burdened with an impressive mixture. Then you repeat ad infinitum until you're groggy. Here's what we had:

Curried beef (excellent)
Rice (lots of it)
Sati (similar to shish-kebab)
Fried prawns (not for me)
Boiled fish (ditto)
Bean sprouts (tender young)
Shredded cucumber (tasty)
Cabbage with curry sauce (!)
Assorted dried fish (ugh)
Chutney (extra good)
Shredded coconut (okey)
Peanuts (oiled and good)
Whole fried bananas (A-1)
Etc.—lots of odds and ends
Dessert: Gula Malacca (tapioca with palm sugar and coconut milk—very fine).

I had been warned that a real *rijst-tafel* is very, very hot to the western palate. Our meal, I'm told, was just fairly hot. The fried bananas were about the only thing not hot and are supposed to balance off the spices and whatever the hot stuff is. You're also supposed to cool off the tongue and throat with beer, but I dislike beer heartily. On the whole —excepting for prawns and fish—I enjoyed the meal tremendously. I'm a lousy gourmet but I'll go for a *rijst-tafel* any time.

On to Bangkok. Okey, now let's get to **Bangkok**, capital of the Incredible Kingdom of Siam, located on the big muddy Chao Phya River which flows into the Gulf of Siam, and just three hours north of Singapore.

Our KLM flight (a fine dinner as the sun was setting) arrived on the dot after dark at Bangkok's busy airport. The spacious terminal, one of the largest in the Far East, was rather dimly lighted. **Ed Lind**, who then was PAA's top boss in Bangkok, was on hand to meet us and got us through immigration and customs in quick order and drove us to the city about 30 miles away.

The first signs I spotted as we drove down the dark highway were, first, a big Coca Cola sign saying "Welcome to Bangkok." The next was "Fresh Eggs" in big English letters. So this was Siam? Might as well be in the U. S., thought I, but I soon changed my mind.

As we neared the city there were street lights and then wooden houses, many on stilts, separated from the roadway by scum-covered canals. The roadway and the street into the city was lined with beautiful, large trees. It was

warm. Without going through the main business area we reached the Trocadero Hotel and registered in. The elevator wasn't working and our room was on the third floor front.

What a Hotel! I was ready to pack and leave Bangkok the next morning. All night long there was a racket in front of the hotel. Somebody had the bright idea that this would be a good location for a taxi stand—and taxis consist of both ancient automobiles and some 13,000 sambors, which are tricycle carriages for one or two persons, pushed or pulled by coolies. These taxi guys never sleep, it seems. Talking, shouting, starting cars, all night long. I couldn't imagine putting up with that noise for three nights in a row.

That wasn't all. There were mosquitoes in abundance and I have never considered them friends. The bathroom was filled with them. I always carried an aerosol bomb with me so I managed to kill off several thousand. I needn't have worried so much because I found out next day that there is no malaria in Siam because the anopheles mosquito can't exist in dirty water, and the water thereabouts is far too filthy for the malaria-carrying mosquito. That's the only advantage of filthy water I've ever heard of.

Mosquitoes. As for the bathroom, that was a dilly. It was open at the top to the corridor and in one corner was a big earthen container about four feet high. Out of curiosity I lifted the wooden lid and found the container had a few inches of water in it and was doing a wonderful job of breeding more mosquitoes. To this day I don't know the purpose of the container or the one like it in our next hotel. It was big enough to take a bath in. I suppose it was to store up water in the event of water shortage because all utilities in Bangkok go bust at frequent intervals. But if it was for emergencies it wasn't prepared for use.

There was a shower, a fancy one, consisting of a rusty pipe and a rusty nozzle in another corner and the water went down a drain in the floor after splashing all over you and the rest of the room. The toilet worked in the Trocadero, as I recall, but only after you took it half apart and kept filling it with water.

If this sounds as though I'm fussy, I'd like to say that I can rough it and like it. But the Trocadero is supposed to be the best or next to the best in Bangkok, and this trip wasn't supposed to be an exploration into the jungles.

But not everything in Siam is quite as bad as I've led up to believe, so let me tell you more next issue.

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Engineering and Maintenance Co., Oakland, Calif.; Pacific Airmotive Corp., Burbank, and Temco, C-54 maintenance inspection.

Maj. Gen. W. R. Wolfinbarger, former commanding general of Tactical Air Command's Ninth Air Force, has been appointed chairman of Joint Tactical Air Support Board. Maj. Gen. Edward J. Timberlake Jr., former deputy commander of Far East Air Forces, replaces him at TAC.

•

AIRLINES

Trans-Canada Air Lines has ordered five L-1049C Super Constellations from Lockheed Aircraft Corp. and Qantas Empire Airways has ordered one. TCA has also purchased three North Stars and parts from Canadian Pacific Air Lines for $2,000,000. Super Connies, scheduled for delivery in late 1953, will be used on North Atlantic. Planes will be powered by Wright compound engines and will have maximum take-off gross weight of 130,000 lbs. Lockheed now has 68 of the planes on order from airlines.

Criticism of non-scheduled airline report issued by Senate Small Business Committee was made by Emory S. Land, president of Air Transport Association. Released some time ago, report urged CAB to relax operating restrictions imposed by regulation on non-skeds. Land described the report as "not factual, biased and prejudiced." He said non-skeds were able to "bring service to a fraction of the public by riding on the coattails of the scheduled airline industry insofar as the industry has produced or developed such things as new planes and airborne equipment, better airports, improved navigational aids and air traffic control procedures, either by themselves or by working with government and industry."

Three Convair 340's have been ordered by Philippine Air Lines from Consolidated Vultee Aircraft Corp. for 1953 delivery.

Robinson Airlines bought three more DC-3's which will be used almost exclusively in military charter work. Company now has nine planes.

James A. Wooten has been elected president and a director of U. S. Airlines, certificated all-cargo line, succeeding George M. McCleary. The move was part of a management shake-up which also resulted in election of five new directors and a new slate of officers. It followed acceptance by U. S. stockholders of a new financing plan for the company under which Charles B. Ripley, New York industrialist and one of the new directors, became top individual stockholder. Wooten was once connected with American Airlines' cargo division and was president of Alaska Airlines and Near East Air Transport.

Opening session of International Air Transport Association's seventh annual general meeting in London last week saw international tourist service advocated by Warren Lee Pierson, TWA board chairman, and Sir William Hildred, IATA director general.

Answering rumors that he might resign as president of United Air Lines if negotiations with Air Line Pilots Association fail and a strike follows, W. A. Patterson said: "For your information, I do not recall running away from a problem in the past and after over 20 years in this business I am not changing my character at this late date."

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CIVIL AERONAUTICS BOARD

Colonial Airlines' mail pay has been cut $654,000 annually by CAB. Reduction is on interim basis until final rates can be set. New domestic rate, effective retroactively to July 1, is 21c per plane-mile. Bermuda rate is 22c from July 17. Pay cut is $500,000 domestically and $154,000 for Bermuda.

Three-year renewal of Lake Central Airlines' certificate for route 88, with additional route segment Cincinnati-Chicago with service at Muncie, Ind., has been recommended by Examiner R. Vernon Radcliffe. Other recommendations: additional three-year authorization for service at Zanesville, Marion-Mansfield and Ft. Wayne for TWA; elimination from Chicago and Southern's certificate of Marion and Anderson-Muncie-New Castle; institution of proceeding to suspend Delta's route 54 service at Anderson-Muncie-New Castle.

CAB's proposal to lower the authorized gross weight of Curtis C-46's operating as passenger carriers to 45,800 pounds effective October 1, 1951 and to 43,500 pounds a year later will be the subject of a public hearing to be held by CAB starting September 24, 1951. Hearing will include sworn testimony and other evidence, cross examination of witnesses and presentation of arguments to CAB aimed at establishing whether, in the interests of safety, the gross operating weight of the C-46 should be reduced, if the same end might be accomplished by other means, and if it is to be accomplished, the degree of change required. Place of the hearing has not yet been set. The following have been made parties to the proceeding:

Aircoach Transport Association, Air Line Pilots Association, Air Transport Associates, American Air Transport, Continental Charters, The Flying Tiger Line, Lake Central Airlines, S.S.W. Inc., and the CAA Administrator.

CAB has appealed to U. S. Court of Appeals the injunction issued by U. S. District Court against CAB's regulation 291 limiting frequency of non-scheduled airline flights.

New director of CAB's Alaska office is J. H. FitzGerald, former CAA Alaska regional attorney. He succeeds R. O. Kinsey, resigned.

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FINANCIAL

The Flying Tiger Line reported record net profit of $1,399,872 for fiscal year ended June 30, 1951, against $500,357 profit last fiscal year. Gross revenues were $15,582,059, including $9,109,000 from domestic and foreign freight operations.

All American Airways had profit of $4,660 in fiscal year ended June 30 against $395,450 loss in preceding year.

First Look at Air Transport's War Plans

Rentzel group blueprints mobilization program for all segments of aviation industry.

FIRST detailed look at the country's mobilization plans for the air transport industry, including both airline and non-air carrier activities, was provided last week with the official filing of the Final Report of the Air Transport Mobilization Survey. Report was submitted to Office of Defense Mobilization by D. W. Rentzel, chairman of the Survey Group.

Principal conclusions of the Survey:

• **War Air Service Pattern** covering minimum civil air service will be based on use of four-engine equipment on routes in excess of 800 miles, modern twin-engine equipment on routes 300-700 miles long and DC-3's for 300 miles and under.

• **Inter-carrier equipment transfers,** as dictated by the above policy, should be anticipated and provided for now. Also, an attempt should be made to align friendly foreign transportation services to work in conjunction with our lines.

Government Will Pay

• **Modification of four-engine reserve fleets** to the "basic configuration" will be done at government expense but the 100 pounds maximum increase in aircraft weight resulting will not be compensated. Certain Douglas C-54's will be the only planes on which immediate modifications to the fuel system will be made. Communications and navigation equipment will be minimized by providing for pilot-operated voice radio. Aircraft will be wired for "48-hour" modification to military needs but actual equipment (receivers, transmitters, etc.) will not be installed until mobilization takes place.

• **Prototype mock-ups** of the required modifications to each of the five major types of equipment involved will be assigned to operators who will make the necessary drawings, handle the related engineering and establish basic procedures.

• **Minimum shortage of 19,000 personnel** exists today as compared with M-day requirements, even disregarding the military recall and draft of personnel. 41% of all airline pilots and 33% of other crew members are in the reserve. Immediate action must be taken to establish training programs, provide deferments, etc. Cost to the airlines, in excess of usable training requirements, will be handled by the government.

• **Air Priorities** will be handled by a Director of Air Priorities in the Department of Defense. This high-level Director will control all traffic of all air carriers and the military as well.

Should Use Civil Schools

• **Civil airmen training** potential is "diminishing at an alarming rate" because of closing down of facilities due to lack of business. The military services should not duplicate existing civil training capacity, should "seriously consider" programs for using civil contract schools for cadet flight screening, Air ROTC flight training, technician training, etc.

• **Navy's Bureau of Aeronautics** is urged to adopt a policy of greater utilization of civil overhaul and repair facilities in the same manner as the USAF and it is proposed that no more funds be allocated for new military facilities until civil O&R shops are fully utilized. A Director of Overhaul and Repair would be appointed to coordinate this field.

• **Non-air carrier aviation** should continue without restriction until the advent of war and even during wartime a policy should be adopted to insure against unnecessary wartime restrictions. 88% of the 60,000 certificated aircraft are used for corporation, industrial, business or agricultural purposes and are vital to the U. S. They involve some 400,000 licensed airmen, 3,500 fixed base operations and 6,000 airports.

3,500 Planes Per Year

• **Manufacture of civil aircraft** at the 1950 rate, 3,500 per year, should be provided for.

• **All military occupancy** and usage of civil airport facilities shall be on a negotiated lessee-lessor arrangement and CAA should administer all improvement programs relative to civil airports, even those involving military funds. A National Airport Security Program should be developed.

• **Essential aeronautical electronics** equipment must be assured by carefully monitoring and controlling the electronics industry.

• **Priority system** (officially designated a precedence system) for various aircraft types and missions, both civil and military, must be established.

• **To maintain the required trained reserve** of Federal Airways personnel, the Departments of Defense and Commerce should establish a joint program to protect these workers as required by national interest. Nature of the problem is emphasized by present condition with 46% of the Airways Traffic Control personnel in the military reserves, along with 31% of the airport Traffic Controllers, 14% of the Airways Communicators and 28% of the skilled maintenance technicians.

Effect of the Air Transport Mobilization survey is already being felt. Many of the recommendations have been adopted and put into operation by the agencies concerned, many others are under consideration for action in the near future. In his letter of transmittal to Mobilization Chief Charles E. Wilson, Rentzel pointed out a few concrete examples of this progress:

Responsibility Delegated

1. **Responsibility for implementing** and maintaining on a current basis civil aviation mobilization plans has been delegated to an organization within the Office of the Under Secretary of Commerce for Transportation.

2. **The Departments of Defense and Commerce** have achieved practical agreement on the numbers of four-engine aircraft that can be diverted from civil to military use and on details incident to such a plan.

3. **Discussions are presently underway** between the Departments of Defense and Commerce toward the establishment of a suitable system of air priorities for both civil and military users.

4. **The Airport Use Panel,** established within the ACC, has already accomplished joint use of airports between military and civil users at several points where initial plans of the military contemplated exclusive military use.

5. **Additional funds have been requested** of Congress to implement certain recommendations of the Airways Task Group relative to speeding up the implementation of the report "Air Traffic Control and National Defense."

UP THERE WITH THE BIG NAMES

United Air Lines photo.

United Air Lines' quarter-century of progress includes SKYDROL

Twenty-five years of aviation history has been written in the skies by United Air Lines, America's oldest air transport system. That quarter-century has seen United develop or accept scores of advancements in comfort and safety of passengers. Monsanto is proud to have United, in its silver-anniversary year, using Skydrol as the hydraulic fluid in the cabin superchargers of its "Mainliners."

Skydrol is Monsanto's fire-resistant-type hydraulic fluid. It gives ships extra safety and permits longer service between supercharger and hydraulic system overhauls. United's "Mainliners" have recorded more than 3000 hours of flying time without overhauling superchargers. That means *substantial economy* compared with the 250-hour limit for ordinary hydraulic fluids.

Airplanes have greater safety with Skydrol, both in the air and on the ground. The fluid eliminates the hazard of fires due to broken hydraulic lines, thus protecting passengers, personnel and the multimillion-dollar investment in aircraft.

Skydrol now is used by every domestic air line flying DC-6's and in numerous ships plying overseas airways. Why not look into the advantages Skydrol offers you? For information and a copy of the Monsanto booklet, "*More Safety in the Air with Monsanto's Skydrol*," write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

Monsanto Skydrol Offers These Advantages

SKYDROL is fire-resistant—exceeds the non-flammability requirements of Aeronautical Material Specification 3150.

SKYDROL is a proved superior lubricant. In most critical cases, lubricity more than double that of other hydraulic fluids.

SKYDROL is stable at required operating temperatures and pressures.

SKYDROL is noncorrosive to aircraft metals and alloys.

SKYDROL is nontoxic—does not require special handling or protective clothing.

Skydrol: Reg. U. S. Pat. Off.

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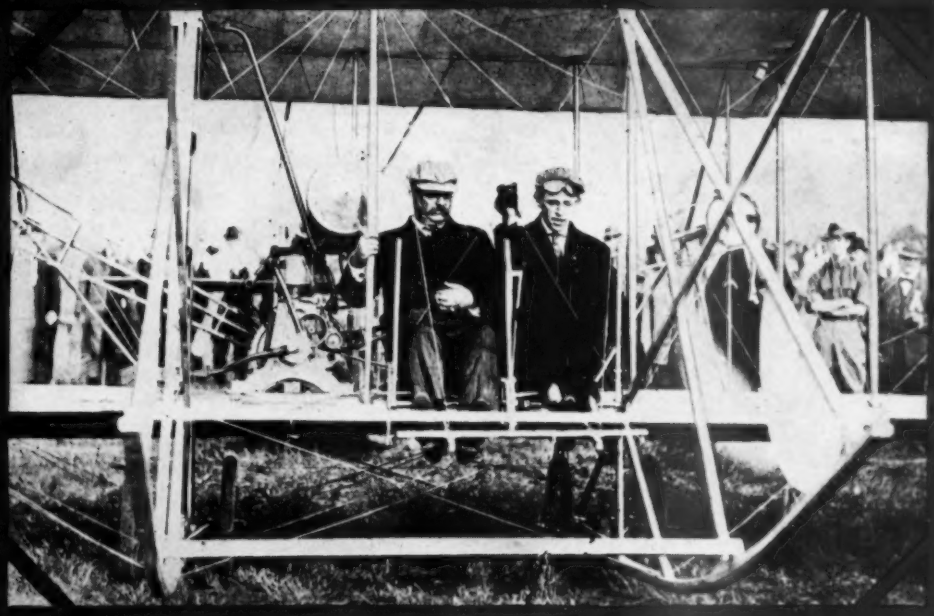
"T.R." TAKES TO THE AIR...



One of the earliest VIP's to fly was "Teddy" Roosevelt. In October 1910, Roosevelt flew with pioneer pilot "Arch" Hoxsey at the St. Louis Aero Club flying meet.

LEGEND says that Theodore Roosevelt asked Arch Hoxsey for permission to fly the machine himself shortly after takeoff. Perhaps he followed through on the controls briefly, but there is no record of the former Chief Executive actually flying a plane.

Hoxsey was a member of the Wright Flying Team. Piloting his 4-cylinder Wright biplane (span 39 feet, chord 6 feet 6 inches RPM 450), Hoxsey captured an altitude record at Los Angeles in 1910. That same year he set an American record for "sustained flight" with a trip from Springfield, Illinois to Clayton, Missouri.

Daring exploits fill the pages of flying's history. And paralleling this record of adventure is another record of sober, scientific research. In one phase of this research, that of aviation fuels and lubricants, Phillips Petroleum Company has played a conspicuous part. Phillips has long been a leader in the development of new fuels. Today, Phillips is a major producer of top grade aviation gasoline for military and commercial planes. And, already, Phillips is delivering much new fuel for turbo-props and jets.

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Phillips 66

AVIATION PRODUCTS

American Aviation

NEWSLETTER

Entered as Second Class Matter

September 24, 1951

Vol. 15 No. 17

RECEIVED 21 SEP

One of the "fantastic new weapons" recently mentioned by President Truman and several Congressmen was unveiled when the Air Force announced it was ordering a tactical guided missile, the pilotless Martin B-61, and was setting up its first pilotless light bomber squadron at the Missile Test Center, Cocoa, Fla., to learn to operate it.

Description: The Matador resembles Martin's XB-51, is about 30 feet long, has a cigar shaped fuselage and thin, stubby wings swept back at an angle of about 30 degrees. A single Allison J-35 jet engine is mounted at the top of the tail structure. Photos show no wheels, so the plane probably starts its flight by dollies which drop off when the plane takes to the air. Its flight and ultimate dive against enemy troops and installations would be electronically controlled. An atomic warhead can undoubtedly be installed in the nose if necessary. After launching, an expendable rocket engine kicks the missile up to a fixed speed, at which point the rocket engine drops out of retractable doors and the J-35 takes over.

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A super priority system to make sure defense orders are filled before any others has just been authorized by the National Production Authority. NPA has told producers to give preference to defense orders when they are unable to meet all defense-rated (DO) orders on time. The priority system also applied to orders by the Atomic Energy Commission.

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Also authorized was a new DX rating to be applied to items other than steel, copper and aluminum for the defense and AEC programs.

Immediate Benefit: Machine tool builders think this superpriority will remove the last remaining bottleneck in heavy equipment production. It can be extended from one supplier of parts to another for component parts of assemblies, thus enabling tool producers to get the parts that have held up completion of many tools until now.

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Large-scale airline mergers moved nearer reality last week as CAB started investigation aimed at linking Delta with Northeast, Colonial and portions of Capital, or linking National with Northeast and Colonial. Expressing concern with the "weak route structure of the small airlines serving the eastern region," CAB said its action looks toward integration of these carriers with the "stronger southern carriers."

Delta and Northeast have been committed to merge for some time but need a connecting link for their routes. Colonial's new management is known to be negotiating with Northeast officials, which would lessen the gap between Delta and Northeast by some 200 miles. Inclusion of Capital in the four-way merger would link up all the routes.

In various stages, a possible merger of National with Colonial and/or Northeast has come to light, but CAB's investigation move is the first time the Board has officially recognized such a hook-up.

CAB emphasized that its investigation is to determine the requirements of the public interest and the public convenience and necessity, but that under the law, mergers can be achieved only by voluntary agreement of the various carriers. Industry observers express little doubt, however, that a Board finding in favor of a merger is tantamount to a compulsory ruling.

New investigation is called the New England-Southern States Merger Investigation and is consolidated with the pending Delta-Northeast Merger Case.

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With more and more Air Force generals leaving the military service to take jobs in private industry while they are still comparatively young, many Congressmen are getting disgruntled. Some of the officers may be called on to explain their reasons for retiring or resigning.

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Defense Air Transportation Administration will be set up under D. W. Rentzel, Undersecretary of Commerce for Transportation. The new group will take over the functions of the air transport mobilization office, which had been headed by Donald Connolly under Rentzel's supervision. Connolly is returning to his Baltimore airport job and a new DATA director is being sought.

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MANUFACTURING

U. S. District Court in Washington has thrown out a case in which Joseph C. Myers, Arlington, Va., charged North American Aviation, Inc. infringed on a patent he held for gun blast doors, claiming it was used on the F-86. NAA held that when a patent is used by or for the U. S. without the owner's consent, he can only sue the government in the Court of Claims and the [illegible] decision's victory did not involve the question of infringement but dealt only with jurisdiction. Myers said he plans to carry the case as far as it can go.

CIRCULATION COPY 3

Goodyear Aircraft Corp., which has been doing subcontract work in the airframe field, will be-

come a prime aircraft builder under a new Navy contract. It will build McDonnell F3H-1 Demon carrier-based jets under a licensing agreement with McDonnell. Production will be at the company's Akron, Ohio plant. McDonnell will also build production quantities of the F3H-1 at its St. Louis plant. These are the first production orders issued for the plane which only last month completed its first test flight. The Demon is a single-place swept-wing jet powered by a Westinghouse J-40 engine.

A swept-wing Grumman Panther, designated the F9F-6, has been ordered by the Navy Bureau of Aeronautics. The swept wings and Pratt & Whitney 6,250-pound-thrust J-48 engine will put the new plane in the 700 mph class.

Both sides in the Northwest Airlines-Boeing Airplane Co. case have asked for jury trials. In its cross-complaint to NWA's action, asking for $24,798,506 because of alleged late delivery of Stratocruisers, Boeing demanded $5,000,000 for damage to its business and reputation, $1,204,924 because NWA allegedly did not cooperate in the contract, $806,204 for additional services and $190,487 for spare parts.

President Lawrence D. Bell has sold his 13,200 shares and first vice president Ray P. Whitman has sold his 4,067 shares in Bell Aircraft Corp., but both men plan to reacquire substantial interests in the firm on a new tax basis. They will continue to hold their present jobs. Company directors recently renewed Bell's employment contract for five years beginning March 1.

Canadair, Ltd. will produce 400-500 Lockheed T-33 jet trainers under a licensing agreement between Lockheed and the Canadian government. Tooling has already started at Montreal, and Canadair executives are studying Lockheed's manufacturing techniques at Burbank.

Defective cylinder in the nation's largest vertical hydraulic press, an 18,000 tonner at the Wyman-Gordon Co. plant in North Grafton, Mass., has put it out of commission for "at least several weeks," again cutting into the available supply of aircraft forgings.

All machine tools held by the armed forces have been inventoried by the Munitions Board and the records are available in the Old Post Office Building in Washington. Any of the services needing a machine tool to break a production bottleneck will be able to draw from the reserve of the other two if it does not have the tool in its own stockpile.

Maj. Gen. Frederick M. Hopkins, Jr., has joined Cleveland Pneumatic Tool Co. as a vice president, and Brig. Gen. **Horace A. Shepard** has taken a similar position with Thompson Products, Inc. Hopkins recently retired and Shepard recently resigned from the Air Force.

All existing military planes should be scrapped and replaced with new ones as soon as they can be made available, according to Douglas vice president Arthur E. Raymond. He told the Royal Aeronautical Society the old practice of having new planes ready for production, but not letting assembly lines roll until they are needed, is outmoded.

Industry Advisory Committee on Military Contractor Relationship has given the Defense Department its proposed program to cut down waste in industrial mobilization and avoid contract renegotiation troubles. The 19 members, headed by Thompson Products president Frederick C. Crawford, call for widespread use of the incentive system to share reduction in costs, better military programming and a uniform policy on allowable costs.

Reynolds Metals Co.'s contract to operate the Manufacturing Methods Pilot Plant at Adrian, Mich., has been terminated by the Air Force, which is now seeking a successor. Reynolds has been unable to agree on a contract with the UAW-CIO and the plant has been strikebound for several weeks. Meanwhile, Mack Industries of Adrian has received a contract to handle maintenance, repair and operation of the experimental facility.

Additional orders for the intercontinental B-36 have been received by Consolidated Vultee Aircraft Corp., but the number of planes was not disclosed.

Ninety different aluminum forgings used as structural parts of the Boeing B-52A eight-jet bomber will be produced by Kaiser-Frazer Corp. under a large contract. The B-52 parts will be built by Kaiser Manufacturing Corp., Richmond, Calif. Production will start in 90 days.

Tax certificates totalling $17,763,862 were granted the McDonnell Aircraft Corp. by the Defense Production Administration. The rapid write off certificates cover McDonnell plants in St. Louis and Robertson, Mo.

New Defense Materials Procurement Agency administrator Jess Larson has named Howard I. Young, who served on the wartime War Production Board, as his deputy.

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PLANES AND EQUIPMENT

Secret label has been partially lifted from Britain's Vickers-Armstrong Supermarine 508 twin jet fighter, which is said to be the fastest and most powerful naval fighter in the world. Two Rolls-Royce Avon jet engines power the craft, but its performance and equipment were not disclosed. Landing speed of the 508 has been kept within carrier requirements by the use of special lift devices on its thin wings.

American Aviation

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First production model of the Beech Twin Bonanza has been delivered to AVCO Manufacturing Corp.'s Lycoming-Spencer Division for use as a transport and for research. The plane, which is equipped with two 260-hp Lycoming GO-435-Ca engines, uses hot exhaust gases discharged through an under-wing augmenter tube to supplement normal engine power.

Sperry engine analyzers will be installed in all 10 of Northwest Airlines' Boeing Stratocruisers at a cost of more than $72,000. NWA, which tested one for a year, said the installations will pay for themselves in decreased maintenance costs in nine months and will save about $65,000 a year after that time.

AG-1 agricultural plane, built by Texas A & M College with CAA funds, is now 95% blueprinted. These blueprints will enable manufacturers and operators to build the plane or adapt any desired portions of the design. The plane was originally built without blueprints.

Navy's Convair PB4Y-2 Privateers in Patrol Squadron Nine in Alaska have been grounded "for morale reasons." The quadron has had three crashes recently.

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MILITARY

USAF has confirmed contract awards in its 1954 interceptor design competition to Convair and Republic. The contracts call for wind tunnels studies and mock-ups but no physical flight articles as yet. Lockheed has been told that it would also get a development contract but the Air Force later changed its mind.

HRS helicopter, Marine Corps' version of the USAF Sikorsky H-19, has made its appearance in the Korean area as a hospital plane. The 600-hp 'copter can transport either five stretcher cases or 10-12 passengers.

USAF's Air Materiel Command claims its seven disbursing offices are saving $2,500,000 in contractors' discounts. The offices were set up near prime manufacturing areas to speed payment for finished goods. They are located at Los Angeles, Fort Worth, Detroit, Boston, Chicago, New York and Seattle.

"Desk" pilots may have to put in a minimum of 20 hours of flying time a month to receive flight pay. An amendment to the Defense Appropriation Bill to this effect was approved by the Senate and will go before a joint conference committee. Present law permits Navy and USAF officers not on flight duty to collect flying pay by spending as few as four hours a month in the air. Some observers think the bill might also block expenditure of funds for the Air National Guard. If this is true, the matter will be straightened out by House-Senate conferees.

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AIRLINES

Case against Colonial Airlines and Sigmund Janas, Sr., for alleged violations of Civil Aeronautics Act has been continued until Oct. 1, again reviving reports of a quick settlement. Federal District Court in New York granted the continuance at the request of U. S. District Attorney's office.

Survey made by University of California and based on 58,000 replies shows that 59% of all passengers traveling by air first class were flying for business reasons and 41% for pleasure. About 35% of coach class passengers were flying on business and 65% were on pleasure trips, while 55% of those using both coach and first class travel classified themselves as being on business and 45% said they were on pleasure travel.

National Airlines' Independent Stockholders Committee will attempt to elect five directors to NAL's 11-man board on Sept. 27. Candidates are William K. Jacobs, Jr., financial counsel and head of the stockholders committee; Robert J. Marony, financial consultant and former vice president of the Chicago, Milwaukee and St. Paul Railroad; Farwell W. Perry, president of Western Newspaper Union; Bradley Gaylord, vice president and director of Pennroad Corp.; and Strabo V. Claggett, president of Whitney-Phoenix, Inc. Jacobs is now an NAL director but has not been proposed by management for re-election.

C. E. Faulk, Delta Air Lines' board chairman, died at his home in Monroe, La., at 73. He was president of the airline from 1935 to 1945, when he stepped up to the board chairmanship.

Lake Central Airlines' vice president Mel Anderson has resigned and return to Houston, Tex., where he is negotiating to set up off-line sales representation for several carriers on a share-cost plan.

All American Airways is considering a change of name to avoid being confused with a non-scheduled carrier operating out of Miami under the same name. The change, if finally decided upon, will not be made for six to eight weeks.

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CIVIL AERONAUTICS BOARD

Major issue in the North Atlantic Certificate Renewal Case will be whether or not present route structures will undergo substantial change. This was apparent at prehearing conference in the case last week when TWA and Pan American agreed on the certification of two U. S. trans-Atlantic operators but differed sharply on route structures. TWA wants major adjustments and permanent status for certificates. Pan Am wants routes renewed substantially in their present form. Hearing is scheduled for Dec. 1.

Annual mail pay cut of $4 million for Trans World Airlines' trans-Atlantic operations has been proposed in a show cause order by CAB. Claiming present rates are too high, CAB said the new rates will prevent necessity for recapture of excessive mail payments to the line. TWA now gets about $7,300,000 for its international run. New proposal offers $3,300,000 annually.

Renewal of Frontier Airlines' certificates for Routes 73 and 74 until Mar. 31, 1955, has been ordered by CAB. Routes are those formerly held by Challenger Airlines and Monarch Air Lines. CAB also suggested elimination of marginal points to strengthen Frontier's routes, and suspended United Air Lines' authority to serve Rock Springs, Wyoming, until Mar. 31, 1955.

Post Office Dept. appeared at a CAB hearing and supported renewal of Piedmont Aviation's local service certificate. This marked the first time the Post Office has taken an affirmative position in a local service case.

Capital Airlines and Braniff Airways have asked CAB approval of an interchange between New York, Pittsburgh and points in Texas, Arkansas and Oklahoma. Service would be via Memphis, although the carriers propose to overfly mandatory junctions if CAB will permit.

Breaking up of the long-established airline practice of providing common passenger fares to the west coast from Chicago and points east has been recommended by CAB Examiner F. Merritt Ruhlen. He suggested that San Francisco fares, now equal to Los Angeles, be made 5% higher than Los Angeles.

Proposed round-trip excursion fares of United, Pan American and Northwest to and from Honolulu, T. H., have been suspended by CAB for 90 days pending investigation. Board action grew out of a complaint by Northwest, which joined in the excursion tariffs as a protective measure. Proposed excursion fare was $216 for round-trips of 16-day limit. Standard fare is $288.

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CONGRESS

Senate Interstate and Foreign Commerce Committee has approved an amendment to S.436, the air mail subsidy separation bill of 1951, restricting authorization of subsidy payments only to certificated carriers which carry mail. This means that certificated lines like Slick Airways and The Flying Tiger Line will not qualify for subsidy payments unless their certificates are changed to include the transportation of mail. The amendment applies to both domestic and U. S. international carriers.

A proposal to expand the Air Force to 200 groups has been made by Sen. George W. Malone (R., Nev.). He made the suggestion during the debate on the Defense Appropriation Bill but has not introduced a bill to that effect as yet.

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LABOR

Strike of 10,000 United Auto Workers-CIO at the Douglas Aircraft Co. plant in Long Beach moved into its third week with discussions still stalemated. The UAW strikers were joined by 269 members of the independent United Aircraft Welders, not only at Long Beach but also at Santa Monica and El Segundo, slowing production somewhat at the latter plants. Federal mediators reported no progress in trying to bring the two factions together.

American Airlines and the Air Line Pilots Association have broken off discussions covering a new contract for AA's pilots and no date has been set for a resumption of negotiations.

ALPA and United Air Lines have not resumed talks on a new contract but Leverett Edwards, chairman of the National Mediation Board, said there is still a possibility of further discussions. He indicated no date has been set for further parleys.

Pay hike of 4% has been granted 2,300 Convair employes represented by Engineers and Architects Association—Independent. It is retroactive to Aug. 13 for hourly workers and Aug. 16 for salaried employes. Agreement has been approved by regional Wage Stabilization Board at San Francisco.

A wage hike of 4% for 800 office, technical and salaried employes of Ryan Aeronautical Co. is up before the Wage Stabilization Board for approval. Ryan's 30 members of the International Brotherhood of Electrical Workers-AFL also petitioned the WSB for the increase, but United Auto Workers-CIO and the independent United Aircraft Welders turned down the proposed boost. UAW's pact with Ryan expires Oct. 23 and the welders' contract ends Oct. 12. Officials of both unions said they felt acceptance of the 4% hike now might tie their hands during negotiations, which are already under way. UAW's demands are similar to those asked of the strike-bound Douglas plant at Long Beach.

First of two UAW-CIO regional meetings to discuss aircraft contracts was scheduled to be held Sept. 22 at Long Beach, Calif. The other will be held in New York Oct. 6.

Certification of stewards and stewardesses has been requested from the CAB by the Air Line Pilots Association on behalf of its affiliate, Air Line Stewards and Stewardesses Association. ALPA contends certification, including more comprehensive training courses and examination of airline equipment, would contribute to greater airline safety.

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FINANCIAL

Menasco Manufacturing Co. netted $483,852, or 37c a share, on sales of $7,234,920 for fiscal year ended June 30 as against a net of $134,003, or 10c a share, on sales of $4,870,116 for the same period of 1950. Backlog is now over $25,000,000.

Continental Motors Corp. netted $3,276,292, or 99c a share, for the nine months ended July 31 as against a net of $2,513,667, or 76c a share, for the same period last year.

Helicopter Air Service Inc. reported net earnings of $22,679 for 1950, first full year of operations, on gross revenues of $371,483, and expenses of $329,616.

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AROUND THE WORLD

Sir Miles Thomas, chairman of British Overseas Airways Corporation, revealed at the Society of British Aircraft Constructors' dinner in London that within a few years BOAC will be operating two All-Britain 'round-the-world routes. One route, he said, will encircle the northern hemisphere via the North Atlantic, Canada and the North Pacific to join up with existing service to Tokyo. The other "will cross the Atlantic and the American Continent to the shores of the Pacific; then, in conjunction with our existing associates, British Commonwealth Pacific Airlines and Quantas Empire Airways, to link Australasia with the homeland by eastabout and westabout routes."

Cathay Pacific Airways of Hong Kong is now wholly owned by Butterfield & Swire and Australian National Airways. The line's former general manager, S. H. de Kantzow, has sold his 10% interest and returned to Australia.